

575-625

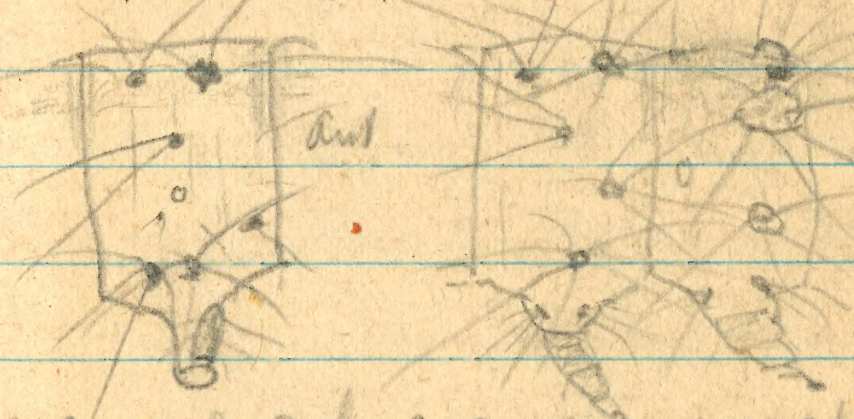
Vol. 620
No. 30

65 1.1 1.9 3.2 (4.1) 5.3 m. 6.0
 1.05 3.0-3.2 5.5 $\sqrt{6} = 2.4$

575

Alcoholic larvae of *Dendrobates* 6561
 from Mr. Howard, Tucson, Arizona
 feeding in web on *Imecus emargin.*

Hds 1.05 II secondary hair. The secondary



hairs are fully developed.

Body grayish white with

a row of sd esp. orange spots, diffuse
 (wavy). Hd & thor. feet shiny black.
 Vents black, very small. C-sh. ^{displate.} anal pl.
 & a d. patch on Bant. brown black.

Hair few, fine spinulated, rather long.
 Hds 3.0-3.2 IV head, c-sh. 12-13 dorsally.

anal plate & anal feet black. Body gray
 mottled with black, defined in a
 series of 2-d dots & narrow lateral line.
 between which runs a broad orange
 red band. Hair fine, white, rather
 thick with a series of little short

dorsal tufts. Venter dark gray with a black median-v interrupted line. Body quite densely clothed with 2^d hair. The venter almost obsolete, some of the larger ones persisting black. (i, ii, iii and vi with the latter double) Leg plates dark.

[Subd from corn 6.4]
 Hd 5.5+ Black, lunif dorsal piece, side piece & median suture whitish; mouth pale, all covered with soft white 2^d hairs. Rounded, rather large, not retracted. Body curiously transversely streaked with whitish & red-brown. There is a rather broad shaded blackish band below the spiracles, relieved by a series of whitish interspersed patches below, otherwise grading into the dark venter marked with black & light red each side of the median black patch. Above the ss line all the marks are transverse except a narrow brown black broken superstitious line which cuts them. The ground color is whitish, shading into bright

Calc. 1.05- 1.5 2.2 3.2 4.5 6.5 rat. 7.0
 Fund 1.05- 3.0-2 5.5-6.4

brown sd with about 6 trans streaks of brown black, obscured, much disturbed interspersed. They become clouded in a dark brown shade centrally & are relieved by a sd orange trans. dash on first third of each seg. 4-12 - a rather conspicuous marking* at the lateral ^{the gray red} edge of ~~these~~ a dark red shade obscuring parallels the longitudinal superstitious line. C-sh velvet black with two white streaks below it. Anal plates black, 12 heavily clouded with blackish. The feet red-dish, abd dark with a bright whitish streak down the outer side. Hair soft, fine white, tufted d. & s-r. Centrally in the segs. Warts absent, hairs 2^d. No perceptible enlargement below c-sh. 12 not enlarged. *Defined before by darker brown: an anterior dark brown sd patch. These trans markings are produced by a series of fine short dark brown 2^d hairs in 4 trans lines over dorsum & a broken blackish d. & ad shading on the ground of the original orange red head sd (and

The short brown hairs are stiff thick walled tube, smooth, with pointed conical ends. The long white hairs are more slender, colorless, thin walled, smooth or slightly roughened toward the ends with short lamellen points, gently tapering to the tips. The short hairs are widest at terminal third, tapering a little toward base, minutely granular roughened just before the tip. (If the larva be firmly handled the long hairs remain but the short ones come out in a fine velvet in the fingers & adhere strongly - a slight irritation). Length short hair .4-.6 mm, white 3-6 mm. Egg. Egg shaped, one end bluntly rounded the other conical pointed, slightly flattened above & below. White, very slightly shiny, a small round yellowish translucent spot in the center of each flattened side. (The long end had been eaten by all the

cocoon. Thin, almost papery, of a dark brown silk, single but with some loose silk within elliptical, less definite than *Clethrionomys*, the ends thinner for emergence. 35 x 15 mm. Larvae as can not tell if any microscopic marking) L. 18, w 1.5, through flattened sides 1.4 (greatest width in 4th segs). Shell minutely roughish $\frac{1}{2}$ in. obj. but without wrinkles. Laid in irregular clumps without any covering. Larvae eat shell after hatched more than 1 mm! Hd. of larva still in the shell 1+ mm! Pupa robust, the abdomen large, thicker than the thorax, slightly curved ventrally, the anal end rounded, pilose, without cremaster. 3 movable incisions viz. 4-5 5-6 6-7th abd. segs. (joints 8-9 9-10 10-11), the other incision before abd. seg 8 distinct but fixed. Spiracles large distinct, on abd segs 2 to 8. Cases smooth, compact, firmly united, the joints marked by darker lines; leg cases reach to end of 3rd abd, wing cases to middle of 4th antennae cases opposite end of 2nd abd. Head & thorax are pilose, abd. less distinctly so; cases smooth. Color light reddish brown, incisions spiracles & sutures darker. L. 25 w. 10 mm

Bred by Mrs. Slosser. She says it is *Euaemia*
crassinervella Zell (*Miza lignivora* Wlk) Smith
list no 5178.

576

4/11/96

Sent by Mrs. Slosser from Punta Gorda, Fla.
"everywhere on a prickly shrub" with small
leaves "springing from a thread." Feb 17 '96
Flattened, thick, head sparsely retractile but
large, 12 slightly enlarged basally, shape
of *Harisina* and *Nola* but more flexible.
Suggesting codes in soft s-v regions; feet
very soft, short, of normal number.

is ii approximate in time trace, iii single, iv
v approximate but by no means consolidated
iv a little above v, vi double. Also an extra
seta at i or ii or between them or absent,
clearly secondary and extremely variable, on
only a few segs. a soft evanescent coluber
space above vi on foot segments. Subprimar
present on 3-4, vi double. (See alcohol.)

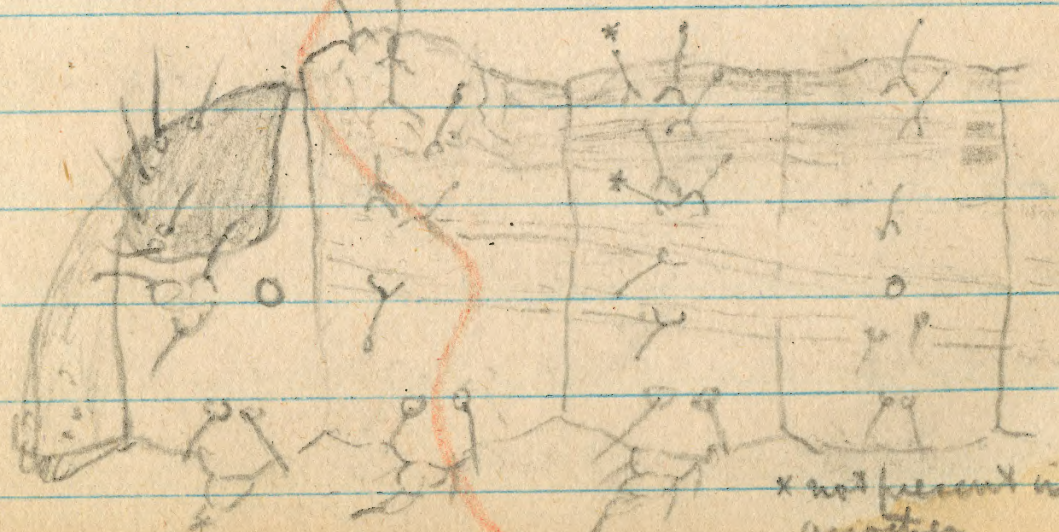
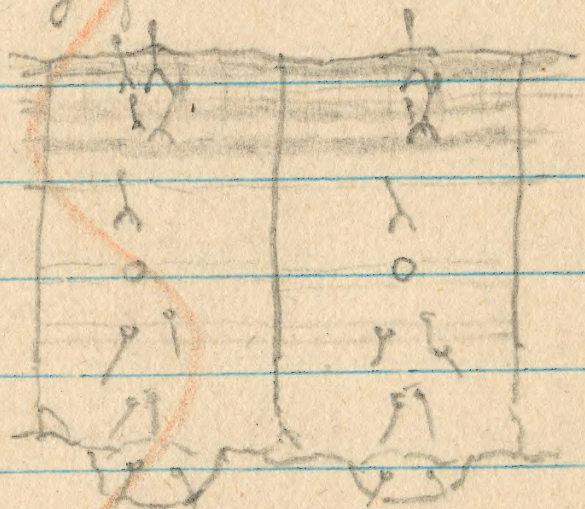
C-sh large, black; hd black the sutures
labrum white.

Pale, Dorsum broadly black containing a
narrow white d. line, a broader pale
orange ad-d. line, darker orange at the slightly

Junco Apr. 4 1896, Cat. no. 12082

elevated tubercles i-ii especially on 3, 12
and 13, a narrow white s.d. line. Lateral
region colorless, a broad white lateral
line above iii edging the black dorsum, a
narrow white stg. and s-v line. Spiracles
round, yellowish. Setae short, pale,
slightly swollen at tip. Length 8-9 mm,
w. hd 1.3±; Anal plate whitish, slightly
marked with black. vii on leg, no plate.
Skin finely watery granular, marks below
skin a little

Holes in a
half circle
on the in-mid
side



* not present in
another

577

Small slender pale green larva spinning a web and entering by the edges into a house the young tender leaves of *Coccoloba flandina*. Setae pale obscure but apparently normal for *Intricid*. is a v. seen minted but I don't not perfectly distinguish 2 setae. Tubercles concolorous. pupated between 2 leaves.

Imago March 13 Cert. No. 12057
a *Intricid*.

Calc.	.32	.49	.75	1.13	1.7	2.6	rat. 66
Found	.3	.45	.55	.65	.75	1.7	2.4 ±
Hyb. in IV							

578

March 8, 1897

Callimorpha fulvipes larvae after liberation from Mr. J. D. Walker, Stockton Ind. Recd May 2 1896 Hds. 1.6, 1.6, 1.75 (sh 1.7 mm) Black, d. hard, sd faint, imperfectly hard, sub-
stij fainter, s-v. trace yellow lines none or less white spotted. Hd & warts shiny. Hair short, black. Like next stage but rather duller and more with d. line red spotted. Really the same.

Hds 2.1-2.3 (Horn 2.4, 2.7) Hd & warts shiny black latter bluish. Body deep black, d. line hard straight, narrowly broken in in-
crease & center of seg. yellow, darker yellow or red in center of seg, faint on 2. Traces of sd hard, broken by ii, whitish, mottled. Lateral band broad, indented by iii and iv broken into 3 or 4 seg. spots by transverse black lines, yellow, irregularly stained with darker yellow; connected below by mottling and dots with a narrow sub-

stig. line between iv and v, broken, mottled yellow. Trace of a s-v line between v & vi on base of each leg. Leg plates black. Venter broadly pale gray blackish dotted.

Hair very short, inconspicuous, black or black & white, stiff, pointed, not barbed.

Spinning May 7 web of fine white silk pupated May 12. Imago June 8 1896.

Egg (infertile) $\frac{2}{3}$ of an oval, possibly a trice conoidal base flat; smooth, shining darkish yellow; d. .6 mm. Retraculation obscure, visible by strong reflected light, very narrow, linear, irregularly 6 angular, the cell areas flat, uniform, no shadows.

Got more, a few futile, hatched July 1 1896.

Head high, bilobed, lobes blackish brown, a pale mouth line; w. .3 mm. Body pale yellowish, venter

blackish, dusky, peach
hair short, stiff, white. Feet pale.

and one hair seen on side part of 13 and there may be only 4 hairs on anal pl. (not fully studied, see also vol) Setae normal, vi absent ate anything. Snow not large slender to 4.5 mm. The tubercles becoming surrounded by brown narrowly. Molt July 7 Hd black, shining, a whitish jaw line, w. 4.5. Body whitish, venter rather small, with shields deep shining black, hair not numerous short, bristly black. A wide space between i suggests d. band, venter each narrowly edged with brown and distinct sd, but no continuous marks. S-v faint pale.

Molt July 14 Hd shiny black d and mouth brown w. 5 w. 5.5 venter large black, hairs short bristly few black & white. Body long broad whitish between ii fading into smoky black along iii is a band. Below iii to v another pale band, marked with yellow trans. annulated streaks behind iv, 2 per seg. S-v brown shaded. Leg plates black. Later appear legs brown gray, lined d. narrow sd (i) pale bands; Super & substly conjoined bands; upper yellow spotted also joined to a broken or band below v. This is the appearance the bands being not clearly defined. (sl. hd 5.0)

Molt July 22 Hd .65 w. Black, a broad diffuse d gray line joining a narrow sd. Last iii-iv yellow spotted joining substly gray band and s-v marks same as before. Venter black, hair short stiff.

Molt Aug 3 Hd .75 Black, pale white d, sd and substly line, sd faint. Bright yellow superstitious line, not perceptibly joined to substly do not see any s-v pale marks. Venter black.

Now Aug 13

A very yellow lot
with nice red
waits.

579

Dr. Behr's *Oxyia* on *Ceanothus* from ^{Alameda} Santa
Cruz Mt. Cal. Eggs in wool. Hatched May 11 '96
Hd. black, body dark, whitish d. on 3-4 and
9-11, warts black, hair abundant black
single, all as usual. Ate willow

May 9 Black, no tufts no pencils
white d. patches 3-4 and 9, red
retractile warts. Square ear-marked *Oxyia*

May 14 1 black 3 white tufts. Warts orange,
red tub. red. Pencils on 2 & 12, 3-4 9 d.
pale all as usual. Hd 1.2

May 16 Tuft all bigger 1 black 3 white
wart large, red. Yellow sd. & s-s broken
yellow line. Dorsal yellow streaked
mostly 3-4. Trace lat. line around iii [Hd 2.1]

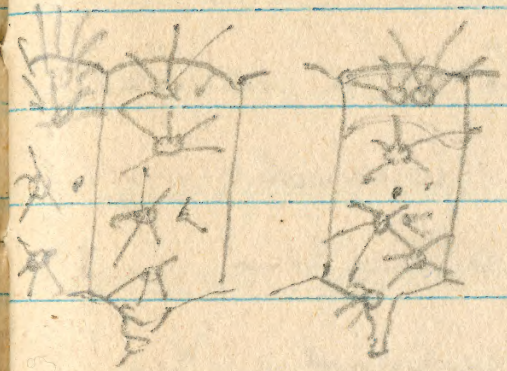
May 20 Tuft all alike gray along crest
Pencil on 2 preceded by a gray tuft. 3 later
broken yellow line, wart red. Hd 2.7 ±

May 22 (shhd 1.6) Hd 2.2 ± 1 black 3 white
tufts. May 28 (shhd 2.5) Hd 3.5 tufts white

.25 .35 .5 .7 1.0 1.4 rat 7 Cule.
.3 5 7 1.0
(B 525)

May 13 1898

580 = 525



Pale green, warts sd and
straight d. narrow, whitish
line. Wart pale hair white
thick, a few slightly gland.

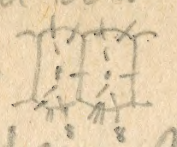
not tipped. No secondary hair. Skin smooth,
minutely watery granular. A rudimentary
seta? above & behind spiracle. 7 Hds. 5 mm
(See BB 529 of which this may be the young stage)

On young leaves of a weed. Cluster, opposite lu-
ciliate serrate leaves, reddish stem. Var. Cal-
land Park, N. Y. May 8 1896 ^{Eupatorium} sessilifolium

May 12 Hd 7 pale, eye black mouth brown
Prof as before, but a broad whitish band
sd along i-ii. Tubercles whitish, hair stiff
white, rather long. No line visible iv+v

The tubercle near spiracle has a single dot
but distinct seta with swollen tip, the one
behind iv+v two setae as before. In ♂ gall
differs yellowish dorsally. In another line the
same but yellowish above rather than white
Hair 1.2 mm above & below

Hd 1.0+ pale yellowish, ocelli black. Body green. Sd & stig bands whitish. Lateral along spiracle narrow. d. a narrow lateral as before. Hair long, white, rather abundant. No secondary. Hair $3\frac{1}{2}$ mm long (above dorsum). Head scarcely retracted; evidently less than 582. Imago June 3 1896

On joints 5 & 6 vii upper seta moved up; on j 7 one feet, vii of 3 setae  viii alike on 5-7. Imago June 16 *Platyspina scabra*. Cat. no. 12185 581

Little slender green noctuid on golden rod Washington Height May 17 1896. Ate white oak. Slender, feet absent on 7, small on 8, green, a sd & stig whitish line, d. vessel dark. Setae long & fine, blackish. Hd bilobed faintly brownish; w. 6 mm.

Molt May 19 Hd 1 mm shiny green. Body no wider than hd yet 11 mm long, slender, anal feet remote parallel. Green, slightly whitish; d. vessel dark. A narrow white sd & stig. line. Feet as before. Setae long, rather coarse, darker, from distinct green tubercles, i-vi normal for Noctuidae.

Molt May 21 Hd 1.4 Green & high. D vessel white edged. Sd & stig ^{narrow} white line, s-o color more yellowish. No feet on 7, on 8 about alike. Setae long blackish.

Molt May 25 Hd 1.9 Taper white. Same. Anal feet divergent all claspers pink. Very long and slender. D vessel distinct. Stig. line much lighter than sd, with linear. white edging to d vessel obscure fading off into ground color. Skin thin. May 29 marks all faded out to d. Length 20 mm.

Imago June 3 1896

May 13 1898

also on common rough
golden rod (?) but rare.

582

Larva on smooth bushy golden rod, Van Cullight
Park, N.Y. May 18 1896

Hair gray, glandular
swollen at tip even to
eye and often also along the shaft. A few
short 2' glandular hair s-v. ^{short} Green, semi

transparent, no marks, tracheal line
faintly by transparency, d. vessel darker,
a row of minute d. unpaired black dot
5-11. Head faintly brownish, retracted at
apex. Mark slight discoloration, owing to
brown rings at the base of the hair.

Hair thick, solid white, sparse,
1 mm above dorsum. Head, 7 mm 3 glands
in 9 yellowish not pronounced. L 10 mm

Hd 5 Same Hd 4 brown blackish in sutures


Same hair shorter; wings darker. Body more whitish

Pupa May 23 By cremaster; thorax oblique truncate and
rounded; head retracted with coarse tubercles arising
from. Green having the hair fewer shorter than in larva
and ocellus glandular at apex. Rows of fine hair
down the sides. A white patch d. a 4-5. abd eye

setae uniform; no winged elevation. L 8 mm

Calc	.34	.48	.69	.98	1.4	2.0	$\frac{7}{10}$
Found	.3	.4	.8		1.3	2.0	
Calc	.29	.47	.79		1.3	2.2	$\frac{6}{10}$
			583				

Eggs on Verbena said by Mr. Bentermille
to be *Crambodes talidiformis*, Fox Lee N. J.

May 24 1896. Egg  cylindrical, rounded
at apex but tapering very little, flat at
base; strongly vertically ribbed, the
ribs coarse and few (20) about 1 in 3
conspicuously not attaining vertex - mid
ridge, thin, sharp edged ridge, scarcely
marked by the thin and lower transverse
ridges. Whitish with vertical red dot
and ring. Diameter .5 mm, height .4

Stage I Setae normal, vi absent; leg plate
distinct. Feet normal, but 2 and 3
short & uncurved. Wings - Head faint
brownish ocelli black, w. 3 mm Body

greenish setae & tubercles black distinct
Molt May 27 Hd whitish with lateral tint,

labrum pinkish. A V-shaped dusky band
on A & a parallel on each side beside a
few marks around ocelli; w. 4 mm.

Feet on 7-8 small, on 9-10 & 13 large, 12 enlarged d. Setae stiff, black, suberect, long i-vi normal, tubercle small. Body green closely banded with fine longitudinal dusky bands, adducal, sd(ii), lateral, suberect(iii); (iv) in a pale sty shade; subtergital (ultra) and bases of feet faintly banded.

Molt Apr 30 Hd. & same, a distinct white substy stripe and bases of a sd on (ultra ii); dusky bands as before, but the 2-v ones obscured and broken.

Molt June 1 Hd. 1.3mm green, a blackish line in antenna, trifid in vertex; a broad mottled band up from before antenna & 2 lines behind ocelli, narrow pinkish. Body green essentially as before: - in detail a narrow white d line with broader dusky blackish borders, a slender sd line, bordered only above; a lateral white line faint, with a trace of border

above & continuing to the head dorsum, upper border of the broad white sty. line. Suberect bifid green, on dark border below sty line. Setae black ringed. Dorsally feet weak & short on 7 and 12; other feet normal, 12 scarcely enlarged.

~~Body~~ Larva up like the other distinct d. By June 3 black all gone. Green, d. sd & lat very narrow white lines, broad sty, slightly red centered. Tubercles white, spiracles black.


June 5 Hd 2 green faintly mottled over. Body mostly blackish, labrum pinkish. Body legs green, folded incisions yellowish. Traces of d, sd lat. dotted white lines, broad sty. red centered, 2 ant-anal feet; a few dots 2-v; tubercles white, spiracles black. Feet & setae normal.

W 5th or anal pl. corrugated, 4-5 setae by pl. Empty June 8. But imperfect smooth crumpled.

Acrostasis stigmella Dyar
N.Y. Feb 1908


584

Pyralid on birch (off Packard p 309)
Webbs up the 3 leaflets at end of a
leaf and form a spine in the stem
where they are attached, or web up
a little leaf and burrow in young wood.



Cinereous green, legs
C. 1st 2 feet shining
black, anal plate brown
tapers abruptly at both
ends. Tubercles small brown, head long
black. Thor 3, abd 2-acuminate. A
circular ring around iii on 12

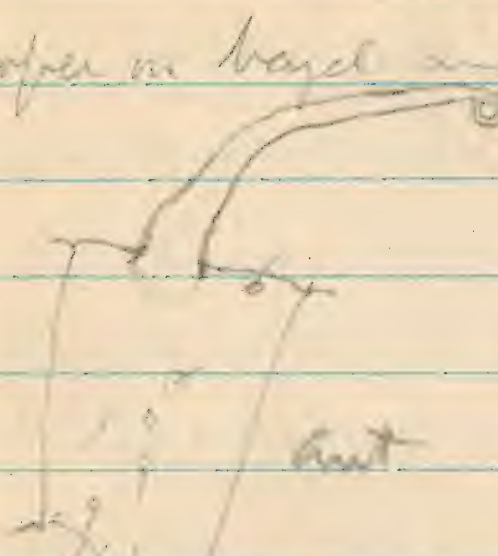
also a ring about ii on 3. Hd 1.4 shiny
dark brown Cth blackish with a pale
line. Anal pl large brown, a coarsely
small d tubercle 13 ant. 14



& closed appears nearly in line.
Larva undisturbed brown. (From
June 3)

Specimen Anacrostis D.B. May
1/1910.

585



Looper on bayonet and Hickory with 2 pairs
long curled processes
which can be expanded
or rolled up. A fleshy
elongation bearing ii
on 6 and 7. A short
fleshy horn ii on 5 and i on 12. i on 7
and 8 and iv on 6 & 7 slightly more prominent
than the other single obscure tubercles. Feet
on 10 & 13. Mottled in brown & pale
shades like dead leaf. 5 yellowish d
with a pair of yellow dots behind ii;
darker brown on 9 lat. and 12 d. the
rest streaked with various brown and
pale (description only general). Setae
distinct, dark, more obscure 5-8.

Spun a very slight cocoon of a few pieces
of leaves united by threads & pupated June
June 11 1896 Cat no. 12168
Hermetocampa filamentaria

586

Mamestra like noctuid on succoweed
 Thalictrum. Fort Lee N.J. May 21 1896.

Stage II? All black - all green with the
 faint yellow side spots (from previous)
 last stage. Hd full, rounded, $\Delta \frac{3}{4}$ height.

lobes indistinct, broad; yellow, shaded
 to a darker tone by patches of pale
 olivaceous confluent dots; 7 velvety
 black patches - in Δ , venter each lobe,
 each side Δ before eyes, behind eyes
 enclosed by their semicircle. w 2.8 \pm
 Dorsum bright bluish white becoming
 yellow below spiracles, ending sharply
 in middle s-v space, more or less
 yellow tinting diffusely sd. a row of
 d. and super stag. velvety black
 patches, d 3 - last 4 per seg. like
 a broad band transverse lobes.

D. spots the most irregular and less
 broad than the lateral ones. Spiracles

black. Lower half of s-v and venter
 pale translucent green or deep ochrace
 black. Tip of abd. feet pinkish, thoracic
 feet salmon. Spiracles black.
 Setae rather distinct, ^{minute} ~~small~~ tubercles, around
 iv substig. post. Plate set. indistinct, not
 connifed, setae on leg plate on the middle
 of outside of foot, normal.

Stage 5, three black venter, two green. The
 "side spots" which I recall in stage II must
 have been post-stag. as the broad yellow
 band is more distinctly yellow there.

Inverness June 22 1896

Calpa canadensis

June 3 all pale minerals to spin Pupa in nice
white web. Cases projecting in a point like Nereis.
all green with a row of black patches down the back.
June 19, 1896 Cat. no. 12201
589 *Phusia purpurigera*

hatched near 8475 m. *Phusia purpurigera* (Fut
Lee, N.J. May 31, 1896. *Phusia purpurigera*, green
a black ~~band~~ before ocelli, w. 1.5 ±
Body slightly enlarged on segs. 5, 6, 7, 12
tubercles have ^{on prominent segs} rounded bases, seg. on-
cinar deep, segs rounded: appears
bumped and angled more than in the case.
Translucent green, not very yellowish
marked with bright yellow white
in the semblance of oblique trans.
bands. On thorax the white stigmatal
band is still intact, though cut down
at the incision - behind is abd cut
^{in process of} through - sd band obliquely divided
between i and ii, the hinder portion
joining the stig white patch centrally
on seg. The bands unite ^{confusedly} with
a narrow greenish d. line. Feet only
on 9, 10 & 13, abd legs reddish tipped. iii esp. on
516 shiny black. Taken for egg till seen what it is.
Setae obscure, dusky, normal, vii = 3 on abd legs
seg. rather distinct. (5-8)

Cale. 54 90 1.5 2.5 4.1 water 5
5 9 15 25

588 = 82 B

June 21, 1896

larva on willow Fort Lee N.J. May 31, 1896
not *holopandina*, multicauda nor *cineas*.
Egg. As usual hemispherical, base flat, not
shiny dark brown black; diam 1.1 height .7 m.
Calculation not distinct rounded hem-
ispherical, smooth, not elevated, the erect
process scarcely discernible by granulation. Sowing
to make the smooth reticulation conspicuous.
Hatched June 3 Head bilobed, rather square
not human ocelli 5-6, w. 5 ± Thorax
3-12 ^{intersegmentally} broadly greenish yellow
rest of body ^{greenish} brown; thick double,
blackish toward base with 2 corded white
rings. C-horns & tail spiny. Setae normal
i-v and hypoplete in abd, i abd, ii abd, iv and vi
on thorax, vi double. ii & not very evident. At end
of stage yellow band slightly constricted at 6-7
and 11; horns, esp. anal sp. & tail darker
than the minor body. Hd light red. All feet
whitish, thoracic blackish. No marks

(sh. hd. 9)

not June 7 Hd. 8, m. antenna deep, all red
brown, uniform, an. with a tubercle marked
by yellowish dot. Dorsum to spiracles
uniform brown except a yellow patch 3-5
7-10 ant, the dark part of former yellow
and smoky obscures, 2-3; legs pale
yellowish; 2 yellow rings on tail. Tubercles
distinct, setae dark. Chamae slightly spin-
ose. Tail 2.7 mm. June 10 Green, d. band
slight fold on 3 post, O 4-11
and to anal plate, very slightly increased at
11-12 yellow patch on 7p-12a.

not June 12 Hd 1.52 much the same at first
June 14 Hd reddish brown with varying pale
yellow dots over the lobes; pale haired
the brown ocelli. Body bluish green dotted
with white & yellow and streaked with
white in region of feet, d. band light
brown, scarcely yellowish in center of large
patch, slightly fringed or purplish, darker
on the edge with a narrow yellow

not double

band, rebated at 4 to the slight d fold
on 2 post, 6 spiracles on 8, not conspicuously
increased on folds, reticulated to 11 post and
nearly straight to anal pl. Tail with two
yellow green rings. Horns spring, setae stiff.

not June 7 Horns smooth as if last
stage; hd. 2.5. fold on 3 post compound
of 2 rounded humps, being divided by
a dorsal depression; no setae on it.

color like preceding at first, more purplish
Sider green brown and white speckled,
stomach light red with brown rim; d
band whitish green to nearly white, a
narrow brown and yellow edging passing
over double hump on 2 post and
on 7-9 laterally the lower L of band is
filled in with blotchy brown, yellow
inwardly, very dark in spots. Band con-
tracted at 3, but back at all at 11,
gradually narrowing from 8 to 13. Tail
greenish above, brown toward tip with

Calc 85 1.2 1.8 2.5 3.6 1 2



Head Hd 1.7 all black

Thorax 1.7 broadly, white
all over, rough, pubescent
blackish in center
streak whitish (head before dark)

Abdomen 1.7 Hd 1.2 cordate (the
rough, pubescent, no marks
dark, faintly yellowish pale
red line, scattered white

Hd 2 red brown, yellowish at base
mouth & lower black. Antenna
pure white, no dark spots
the pile is short. Did not get full

at tip, giving a slight fringed
appearance. Their tubercles
slight, when very slightly elevated
from the even surface. Body
obovate, fully acuminate.

Pupa before pupation
Like enderun but all light
green except a black dot
on base of fore wing; a smudge
below eye & lines than lines
case at base. Fastened by
loop & aster.

Washington D.C. 1899

the yellow ring, the basal one best in
green shading; spiracles of tenth brown
head purple brown thickly dotted with
yellowish; base of antennae white
sides of cheeks green. Brown spots on
ventral side in place of legs on the
apical segs. (Did spontaneously June 20.)

evidence *Cerema occidentalis*

occasional 7

not long
usually
permanently
to coming
dark
between
behind

2.5 5
with long
very short
height
form, and
d 3.6

spider
upper 2
at base
and, but
is before
and
occasional
at base
2.6

Hesperid larvae to 590 (1896)

Head rounded triangular, green --- 331*
 Head rounded cordate, dark.
 One red spot on each side.

protinus 156*
tityrus 182 = 314*
tratabanus 171*

Three yellow spots on each side
 On oak Cal. 327, N.Y. 589

No yellow spots
 Cervical shield present, dark
 Pile dark, a nearly white
 patch ventrally on 11 & 12

Blackish purple --- 386
 Pale, shaded fiery red --- 544

Pile pale
 On ^{body pale} Asteranthera, Fla. 159*
 On Malva, Cal. --- 141

2 crimson, body coppery red
 On Desmodium N.Y. --- 224
 On Noxalis, Cal. --- 280

No cervical shield nor anal plate

Pale, whitish s-d line
 On lupine, Cal. --- 298

On willow, Cal. --- 282

On poplar & willow, N.Y.
227 = 458

*red

327 = 589	---	probably =	Nisoiades juvenalis
386	---	"	=
544	---	"	=
141	---	"	= Pholisora catullus
224 = 280	---	"	= Eudamias pygmaea
298 = 282 = 227	---	"	= Nisoiades icelus

Calc .85 1.2 1.8 2.5 3.6 7 20



Head 1.7 all black

Head .7 broadly, with
at vertex, rough, pale
brown, black in center
of white (head before dec.)

Head .7 H .12 cordate black
rough, pale, no marks
Body faintly yellowish pale
and some scattered white

H .2 red brown, yellowish cordate
mouth 1 wheel black. m. etc.
Body same as head of granular
the pale marked Did not get full

Washington D.C.

at tip, giving a slight foisted
appearance. Their tubercles
slight, color very slight elevated
from the even surface. Body
obscurely granular.

Pupa before pupation
Like endomorph but all light
green except a black dot
at base of fore wing, a smudge
below eye & lines like long
case at base. Suture of
loop & crease aster.

He



Out July 7 1896

Missioniades juvenalis ♀
Cat no 12256

589 = 327?

Stagger Canna on white oak Bellport, Long Island June 9 1896. Head large, rounded, head culate, the apex of lobes feebly but distinct; a small; brown black coarsely shaped, labrum white and 3 dark narrow spots on each lobe viz. 1 between 1 and ocelli, 2 above 1, 3 below the 1st of head, 3 at apex of lobe on the outward and forward aspect; w. 2.5 ± Body whitish gray, heavily covered with grayish white granules, the 2nd hair very short, stiff, not seen without lens. A straight narrow white s.d. line. All uniform, no plates nor shield. Molt June 14 Hd 3.6 ± Blackish brown with reddish brown scales shading at vertex and outer 1/2 of 1; upper 1/2 of labrum white; 3 large orange spots as before the upper one in the pale ground; hd roughly shaped, not hairy. Body as before with a row of tiny black segments of s.d. dots. 2 smooth, uncorrupted; lack of occiput black; anal plate setiferous. The short fine 2d pile is white with large spherical black

are yellow ring, the basal one dark in green shading; spinules of tent brown. Head purple brown thickly dotted with yellowish; base of antennae white, sides of cheeks green. Brown spots on ventral esp. in place of legs on the abdominal segs. (Died spontaneously June 20.) evidently *Canna occidentalis*

591

Larva in wintergreen sent from Springfield
Maine June 17 1876. All green, venter
centrally broadly white shaded; a narrow
pale yellow ^{sub-}stigmatal line 4-13. Setae
short black, normal. Line along the fold

Calc. .38 .54 .77 1.1 1.57 2.25 (2.65) 3.2
Head .4 .55 .7 1.1 1.55 2.2 2.57 3.2

rat. .7

592

Wet 3

Egg from ♀ *Acartia persepore* (12203) found in
spider web, Greenwood Lake N.Y. June 21 1876
H. 9 height .6 mm. Nearly conical, the base
flat and concave, pale yellowish white
shining. Rets. very fine, broad not sharp,
rounded, forming the hollow shallow
gently fringed pits, thimble-like.

Hatched June 25 1876. Hd. lobes dark
blackish brown. A pale
whitish. Cph dusky
narrow. Body whitish
with long stiff dark
setae. Ventr. pale. Lateral white & leg plates shiny
gray dusky, large. VII 2 setae on 5 and 6.
Leg 5d coat and 13 with 4 hairs. Prespiracle
bubled out has 2 legs and 1 very small hair
at end of stage. Setae family brown
bottled but not distinctly banded out
only, not contrasting. Sh. hd. 4
^{no web} Shed June 30 Ventr. hairy, normal, large except



The last one left shed Sept. 12 (th hd 2.7) now hd 3± deep black, tip of all feet pale, vent slightly shiny.

i which is very small and vi which is moderate. Hd lobed, bases shining blackish, 13 pale w. 55. Hair abundant, stiff, black, body whitish shaded with red from around the dusky warts, giving appearance of longitudinal bands, esp a pale d. line. A few longer hairs post. ①13. As cat's body becomes solid greenish, the whole effect dark.

Sept 4 1st inst. black, 2 pale yellowish with 7 mm long thick & robust, with large black warts, purplish brown mottled, no warts except a faint pale dorsal line. Hair abundant, stiff, bristly, barbed, coarse, black, a few longer ones post.

Pale gray brown, shining, robust d. line, vent large deep black, 1 very small, 11 large. A fainter wavy white d. sd line below ii. 11 large.

Sept 9, 4th 1.12 looks shiny black, 2 large, 1 pale yellowish, robust brown. Body blackish brown, vent as dark as usual, no warts except a very faint pale d. line.

Sept 24 Hd 3.1 (shd 2.5) black, but above much white, bases anterior & pale. Black, but shiny at bases. End of all feet pale. [Shed Aug 31] Did not eat in the stage. Like above with antennae pink, bristly, sides of hd pale.

vent lateral (below ii) lines. Vent shiny black faintly pale mottled at the base. Hair stiff, coarse, barbed, black, a little longer post. and 2 long slender white ones from 13. The pale warts around in one family reddish.

Sept 14 Hd 1.83 bilobed pale brownish, a black shade on each lobe before. Warts brown, eyes large black. Body black, the warts ^{shiny} large with stiff black hair, a pair of long white ones post. a faint whitish dash below iii. No distinct warts.

Faint pale d and sd (below ii) lines: lateral ones pale than d, bases of ii-iv slightly reddish. Bases of the warts very shiny black. (Shd 1.55)

Sept 22 Hd 2 shiny black bases of ant. and then above much white. Body all black, robust, vent shiny. Bases of ii-iv faintly reddish to base. No warts to eye. Hair bristly deep black, barbed, more longer ones post. but all other black. 2 of post feet. (Shd 2.2)

Sept 3 Hd 2.8± faint d. top of hd black, side d. antenna & mouth parts pale brown. Body black, bases shiny, warts dull pale luster, vent shiny, everything else deep black. Hair very coarse, stiff, barbed, all black, longer ones post.

593

Looper like a twig on hophornbeam Van
Cutland's Park N.Y. middle of June
Junc. June 23 Hd \square , flat before, angulated
below by the projecting large antennae
brown mottled darker, 2 black streaks
at vertex each lobe; outer plates of Δ whitish
w. 2.4 mm. Feet w. 2-3 retracted or protruded
w. enlarged bases. Body cylindrical from
5-7, larger post. 8 and 9 swollen, the
tubercles prominent. Thorax and 8-13 gray
brown streaked with white and black
dots on foot w. x and the enlarged 8-9 the
tubercles marked as as the appear very
rough like bark; 10-13 d. quite uniform
gray. 4-7 more reddish brown, rusty,
marked a little with black & gray, the
tubercles, esp. i, slightly elevated (would
take pages to describe all the little irregular
streaks in detail!) spun web June 29

594

(Cat 12204)

(see 657)

Eggs laid by *Crocota opella*, common
flying in oak woods, Greenwood Lake
N.Y. June 21 1896. Eggs very slowly,
slightly more than hemispherical, not
rounded under Δ not not conical, base
flat; shining pearly, faintly yellowish,
d. .55 mm. Reticulation obscure, narrowly
linear, like fine lines traced in the other-
wise smooth and level surface, more or
less elongate, irregular hexagonal. *See*
mostly reddish wing & *opella* Recept. L.J. Aug 3 1896
Also hatched on back side of leaves of red oak Hudson
Hatched Aug. 7 Hd .32 pale reddish brown (below)
Body whitish with very long black hairs. Hairs all
single 1-V. Hairs spinulated 1-11 black dots. Tubercles
large, adpressed to each other. Ventrals button-like (The hind
equal hindmost Aug 8 - just the same)
Hatched Aug 11 Hd whitish by black, mouth black w. 320 (body whitish, then
with coarse brown, i long & haired, ii large many haired. Feet all
gray. Hairs slender black many of long length and a few short
coarser distributed all along the body. Stage 16 Hd .45 acc
came on a little more hairy (sample dried)

July 26
1897

12243 ♀ out from Doll's cocoons of the red, one spiracle
 codes we called *elliottii*, form *viridiclavata*
 but a little too green like those for *elliottii*
 12242 ♂ wild at New Windsor, of form *quercetis*.
 Mated by Miss Winton June 28 1896.

Eggs sent, also more evening of June 29.
 1.6 x .7 pale yellow, ground glass-sparnish
 (on glass), finely reticulate like 570, laid
 on patches 2-20 a singly, some infertile like 570.
 Laid 200 eggs by July 2 secured about 5 die.
 Hatched July 5 All length 1.1 mm. Just like 570
 all pale yellowish translucent. Eggs very flat
 even flat hatching. Molt July 7 Same pale yellow

Length	Weight	Notes
July 7	1.2 mm	Molt of eggs. No marks but the
July 8	1.5 eating	transverse black spines of body.
July 9	1.7 "	
July 10	1.9 " "	July 10 all whitish.
July 11	1.8 by side	Shed July 11 All whitish, legs
July 12	2.2 eating	with good blackish spines. No color
July 13	2.8 "	
July 14	3.5 " "	July 13 long horns faintly yellowish
July 15	3.5 eating	marked by a yellowish line along
July 16	4.0 "	
July 17	4.3 " "	

the ridge a narrow whitish d. line
 Molt July 15 A faint pink tuck in the horns
 ① 4, 5, 8, 11, other whitish. Horns green, d.
 line & paired dots white; lat depressed
 spaces distinct, simple, upper half of lat
 space green, ② column. Broken yellowish

Date	Length	Notes
July 19	4.5 eating	red band, widest at large horn
" 20	5.5 "	Molt July 18 D space distinct with
" 21	6.0 "	blackish contrasting the white
" 22	" "	d. line & paired dots. Long horns
" 23	" "	of ① [3, 5, 8, 11, 12] faint red, ② on
July 24	7.0 eating	red column, ③ blackish
" 25	7.0 "	lateral space blackish white, con-
" 26	7.5 "	trasting the reniform spots. No
" 27	9.3 "	other marks. Spine water plain
" 28	9.8 " "	no callus. July 20 a marked white
" 29	" "	line along a horn point of ① blotched
" 30	10 eating	at 5 and 8. July 21 red lining on
" 31	11 "	3rd band. No pigment d. and vent
Aug 1	" "	above plainly pale eating.
" 2	13.5 walking	
" 3	" "	Molt July 21. All whitish, all
" 4	" "	stained with black reniform.
" 6	15 eating	no distinct line nor pigment
" 8	17 "	patches Horn ③ 3-5, 8 11-12 and
" 10	19 "	② 3-4 turn collar red, the short
" 11	23.5 "	horns faintly reddish white d. line, d. line
		along ① reddish on white ground, white at
		large horns, brown elsewhere. Faint white
		line along ②. D. paired & lateral double

Grew rapidly; 4.5 mm long at end of stage.
Body milky white, tubercles more space, black.
Molt July 4. Hd white, a gray shade at vertex,
eye black w. 6±. 2 small & retracted, wd.
date shaped. 3 small. Ventriform transverse
whitish, a green diffused tint, esp centrally
in region of al. canal. Ventr. small,
inconspicuous. Trough dark. Hair very
fine, long, esp. at ends, light gray
from mixture of white and blackish hairs.

Shed July 7. 2 retracted 3-4, 11-13 shortened, orange dot
on side of 12 and 13. Hair fine and delicate.

Molt July 8. Hd silvery gray, pale around
mouth,celli black; w. 8 mm. Body ground glass
whitish without number except an orange dot
5± on 12, dot not distinct. Ventr. rudimentary
large, perfectly inconspicuous, the abundant hair
fine, pale silvery gray an even dense coat
about 2 mm above the back with numerous
longer ones at both ends, 3-5 and 11-13.
Hair soft and spreading in tufts, all feet
pale. Evidently = Eucheilus williamsi. July 11
hd seems so but I did not see it shed.

Molt July 12. Hd 1.5 mm long as usual.

Very finely hairy hair very fine and

soft, long at the end of stage.
Hd long hair dense. Ventr. small.
Shed July 15. Hd 1.8 mm. Hd yellowish brown
ocelli & feet black, labrum whitish.
Body immovably, hair as before but
crappy, longest at ends
topped with silvery gray.

July 21 empty to April. Hd 2 mm

July 22 spinning.

May 9 1896

" May 24 1897 gave which a pair

mated and gave a fine clutch of eggs May 26

& would not lay till food plentiful provided.

Egg, laid in a batch well separated, nearly

spherical but for the small flattened base

shiny, opaque white with a very slight

yellowish tint. Reticulation fine and small

linear above, the space slightly wrinkled

giving a pebbly or pitted appearance


in oblique light when the rets. themselves do

not appear visible. D. 8 mm H. 7 mm

597

Microp. inside bean pods, *Lathyrus maritimus*
on the sea sand opposite Ballport L.I. July
3, 1896. Setae fine, short, moderate, about
1.5 in. in len, is or approximate
34. White, mottled with brown, reticulate
on p. 2 on body thick & robust, 13 tapering
small. Abdomen whitish green, a dark
transparent green d. 1st and subapical
lines. Squarks black, 1 on black dot
each side etc. Gsh brown mottled
i-iii blackish, its next obscure. No marks
on 13 except a few brownish dots.

598

Section on white oak Ballport L.I. July 5
1896 many together appearing / face of day

a larva easily. Thought to be *Haliandula* under
vi present & 8 setae, otherwise normal, vi
smallest on legless segs vii obscure. Hd shiny
black. Body whitish with faint green tint,
vent & shields black, leg plates only dusky
single hair barbed, black 1-11, pale 5-8.

Hd 4 no marks (2.14)

Molt July 8 Pale, very shaded on thorax and 12.
Mark large dusky blackish, 5-8 and leg
plate paler. Hair several from a wart, black
& white, longer on winging hd. Hd black 50%
on 11 present. iii large 1/2 small and distant.

Molt July 10 Hd 1.0 Black, line above mouth white
body pale yellowish, whitened 3-4 segs, vent
large, low, velvety black; a black sd line
along ii. Hair soft white & black, winging hd.
July 16 Evidently too. Light dorsal etc Hd 1.3+

After last stage, rounded stage, all hair
the fine bristles 2 with on ① and ② much more
abundant. White of face all gone, a very
few black dots tipped ones left.

599 = 250

Eggs of *Phobocera pithecium* from Mrs. Norton
Laid July 4-5 1896. Flat, circular, not
elliptical, scarcely shining, dark ochre
yellow, almost brownish. 1.2 to 1.4 mm
high perhaps 1 mm. Retention rounded
hemispherical, regular, very obscure, scarcely
defined lines more like joining of cells.
Surface not rough, 2 overlapping. By 3rd day
colored with dark brown esp. around edge
appearing distinctly brown. By some of them
the two ultimately makes the egg dark brown
Hatched July 14 1896 color dark brown, darkened

along ① Spin
and setae
all white



Also single setae for ③ & ④

on hatching, setae seen marked before.

hair 1. hair
" set
" single spine

Tubercle hypopharyngeal, about as long
as setae, both spinulated sharply
subradial & minute wrinkled at base

② clearly absent on 5. On hatching ① & ② hairs on
the stiff spines that tip the tubercle, dusky,
spinulose setae, and the long white
hairs of ③ are much longer. ③ has 2
hairs. 79 all are paler than other joints,
the head, sub-ventral, the setae before it
a broad whitish line. Length 1.2 mm
Head dark blackish esp on vertex; on 25 & more
① almost white, ② on thorax shorter, ③ very short
④ on abd. shorter than ⑤ the thorax.

Yause ate a little
of the five that
hatched on 25
on eggs on 25 all
dead but one got 25

8/8 1.2 hairy dark brown thorax & setae. ① & ②
19 1.4 " Dorsal head, lateral color narrow
20 1.3 hairy more from Mrs. Norton July 28, I about
21 " still to shed length 1.7-1.8.
22 1.1 to shed? also stage II 2.5 mm (one by side 1.8 mm)
23 " moulting ① proportionately shorter, conic

exactly as in fig of stage AC-II but
all shorter the legs are shorter & scar-
cely 1/2 their length, the short ones more
stubby, all brown, around white
coarse pale spines. all hairs ex-
cept tips of ① which are white
② 13 show as a tiny point projecting
backward, 3 space narrowly
lined with a few dark setae

more than as a short horn. Horns as long as
C. 26 Same old not exactly. Horns with same shape. (2)
C. 27 5.7 eating. Large horn 6, 8 with large but same shape. (2)
" 28 7.0 " with a fine cross & hair. beside central seta
" 29 7.1 still but still small and hidden. Bigger horn
" 30 7.4 still darker with a wide central line. Spikes
up. Spine full, simple as before. Hd 1 + w
" 31 6.5 by side Eat around still, spitting, often in a circle.
" 7.5 eating The little side horns on 3 & 4 are larger than (2).
" 2 " 5 on each side in a more conical, whitish.
" 3 " 5.5 flanges also very short from around
" 4 " " but simple bristles. At end of horn a single
" 5 " 8.0 with long seta from coiled tubercle; another on base

Shed July 17 hd greenish on Δ and side, face
of lower front banded as to previous numbers
the space filled in with brown markings
on the pattern appeared, labrum pink

antennae pale, apical black, w 3 mm
 1st seg. 3-7 rounded ap. with
 high d. tubercle; 12 short &
 elevated ap. ii, i on 3-7 & 12 and ii 12 long,
 elongated; other low round, all with dense
 crown of hairs. 5th & 2nd setae lvs. & p-v, but
 few and mostly belonging to the diff. vi
 sides green with which each below white
 dotted. 2 band brown, pale central line and
 a pale yellow border and quite continuous
 to the head 2, and a double line over i on
 3-7, suddenly widening to ii on 8-9, just
 covering i on 10-12, continued to anal pl.
 Hair dark broadly. Spiracles black ringed
 short seg. 1. Hd. 3.8 4 green. Holes mottled with
 black & red on a white ground, lines confluent
 into patches of irregular dots. Body fine clear
 greenish brown. Band on 2-3 conspicuous, white
 edged rings. Very narrow between high i, and till
 broken seg (ii) over i on 10. Scales mottled, brown 13.
 1st setae not present on 3-7, 12, other setae con-
 siderable. Hair black, a small crown with a few
 2nd round spiracles & 5-8 the latter tubercle white
 spiracles white black, broadest feet pale
 Late July velvety brown, 1 line fainter, white marks
 lighter. (All setae present)

Calc.	.24	.34	.49	.7	1.0	1.4	rat $\frac{7}{10}$
Found	.2	.35	.6	.6 ±	1 ±	1.4 ±	

C Apr 1 1903

651

Harrisina americana on grape, Ballpark I.
July 12 1896 - just shedding out 3 stages I
3 specimens. Can't say whether etc in I or not.
Elevated only skin slightly spines, none on
head. 1st & 2nd - 1st & 2nd stages, black, the
3rd - 1st & 2nd stages, white, spinulose.
Head large, retrociliate rounded, body flattened
square, segments distinct. Hd about .2 mm.
Sutture yellowish, air made. Instead of a rather
large wart apparently (a probably) just like
mature. ① & ② with a bunch of about 10 spines
with black tips; lower legs & thorax with 2
and part of 3 longer fine white spinulose.
Hd abt .34 mm Gale

July 16 Hds. 6 (Helds. 5) Hds. 6 (Helds. 5) Hds. 6 (Helds. 5)
 Each with 100, 100, 100. Cth large, common
 every one of 2. Rock greenish, dark, all
 pale yellowish. Herin short & brittle flintish
 & soft. 10; some long thin on head.
 as they pass all the water become light green
 & except those on 7 which are all common.

was on 9 where only ① is red.

~~July 22~~ ~~Yellowish~~, col. & warts ①-③ purple
brown except wart on 7 and ②③ on 9 which
are pale brown. Hair very short, stiff, not
on 3 and 13. Sides long & soft. Feet
short, lat. & s-v lines yellow. Head
Hd 6 ±. ~~July 27~~ Yellow to ②, inner
greenish. Warts ①-④ and shield black,
short stiff, dorsal, a few long white
over from 3 and 13. Hair black. Hd 1 ±

Shed Aug 2-3 Same. ~~Aug 7~~ No difference
seen. Little antlers about them. (no change)
Same shed this date but they were
longer than the largest. Spriglets out of small
whitish ovals.

Shed again Aug 10 in thin flaccid warts
①-④ (flaccid)

Out June 13 1897 Harrisina americana
Cat. no. 12770

data. round spriglets 6 ±

11. Concave wart ① in base represent. Hd 1.4 ±
stiff, retracted. Hair pointed, subspicuous
or blackish smooth with clear bulb at base
have three large tubercles. Skin gray clear
granular, granules not quite contiguous.
Yellow, papery on legs, transparent in
incision. Cth and wart ①-④ black.
Thick, stout, feet short. 5 warts on 3 & 4.

602 = 243 = 9

call

599 V shed Feb 31 by side VI
Long horn longer. Sheds new horns
in proportion 2 3 5th curve
backward, side shaped, 7th found
9 pairs visible from above, 1st and
8th short, 4th & 6th very short.
Each has a constriction of basal
piece, both piece & horn with
a terminal seta from a round
tubercle. Horns covered with large
coarse smooth stiff pale spines,
also from short, broad branched
hair which becomes very thick
at apex, giving the horns the
appearance of rusty brown tips.
A few dark hairs on dorsum as
before. On the short horn the fine
hairs are few & absent. ② and
3rd side horn short, curve with many
short spines and a pale smooth tip.
Brown, horns denser with a white
stripe up the middle. 3rd horn
broadly lobate. [I see no differ-
ence at tip of ① and terminal seta]
the group shows 9 large horns small
up with clear fluted (warts?)
long 6 flanges without 2 shed

Long horn with a band of black tipped spines,
and with 1 spine. ② and 3rd horn
blackish, the other 3rd horn

Wine Hunter

in patches 2
elliptical, flat
green, a slight
very obscure,
and.

thick around
long smooth

XX

XX

② 5. Setae

at tip → 17

and white

Hd. 25. eye black

fine fine spines

smooth. ① on

599 VII Shed into N Aug 6 (Just

Aug 7 8 entirely like two found in woods).

" 8 10 " Shape & proportions

" 9 " " flange as in mature

" 10 " " 1, 2, 3 & 5 horns curve

" 11 10 to shed back 7 & 8 forward

" 12 10.5 by hide Cat 10th pair visible from

" 13 " " above, very short.

" 14 12.5 " by cat

" 15 " 12.2 cat

Coloring of horns more modified
fine brown 2nd hair thick, esp. along
and edges of long horns. Coarser
stiff pale hair still present,
about as before on the basal
pieces and on short horns, on the
long horns outwardly reduced in
number & converted into long
pale setae, irregularly spinulose
esp. so toward tip, often on one side
② with pale bare tips & dense
circle of stiff hairs. Brown, S-V
edge white. Horn denser, a pale
gray band up middle of each,
fringed on basal piece. The long
white hairs are on post. edge of
horn away from the greatest no.
of fine brown branched hairs.
Shed Aug 12 all light white horns,
more on woods. Spinulation almost

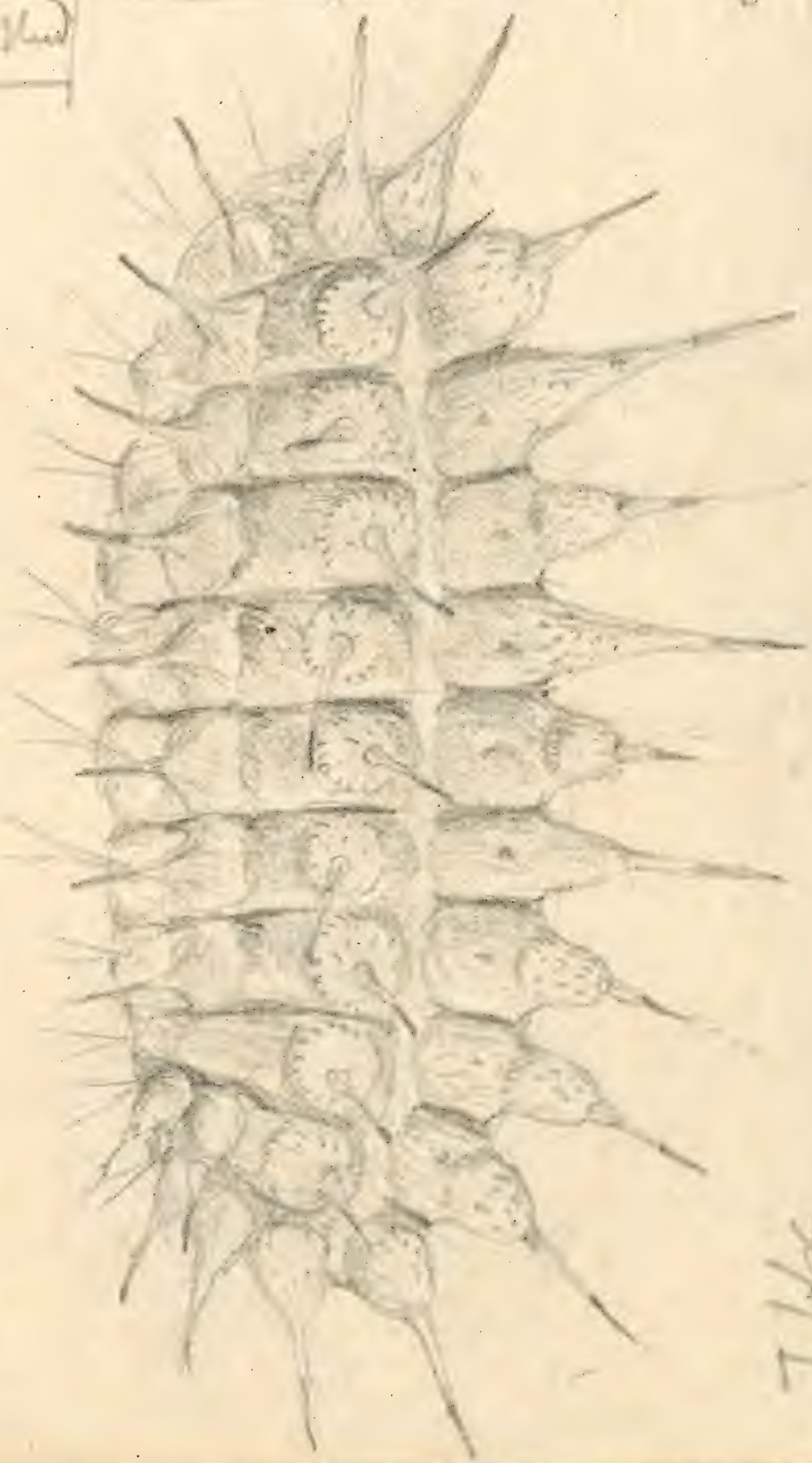
exactly as before except for a few black clubbed
 spinulated hairs in the long hairs. Setae ii of
 Leg ① from a bare cone, beneath a little bush
 of tiny black spines. ② well spinulose, but all spin-
 simple, seta from bare cone. Short ① & several
 pieces coarse spinulose mixed w/ fine branched
 longhorn spinulose but less spinulose hair. w/ 20
 rounded & all the long pale branched club
 tipped and black club tipped (i long pale to kids)
 Aug 17 13 stiles | Shed Aug 22 Last stage
 " 19 13.5 to shed

Aug 29 20
 5 Aug 31

X 35

Phaethon pithecium Stage I

O. M. K. July 28 1896



I 166

calc

1.2-1.7 I 599

1.7-2.5 II "

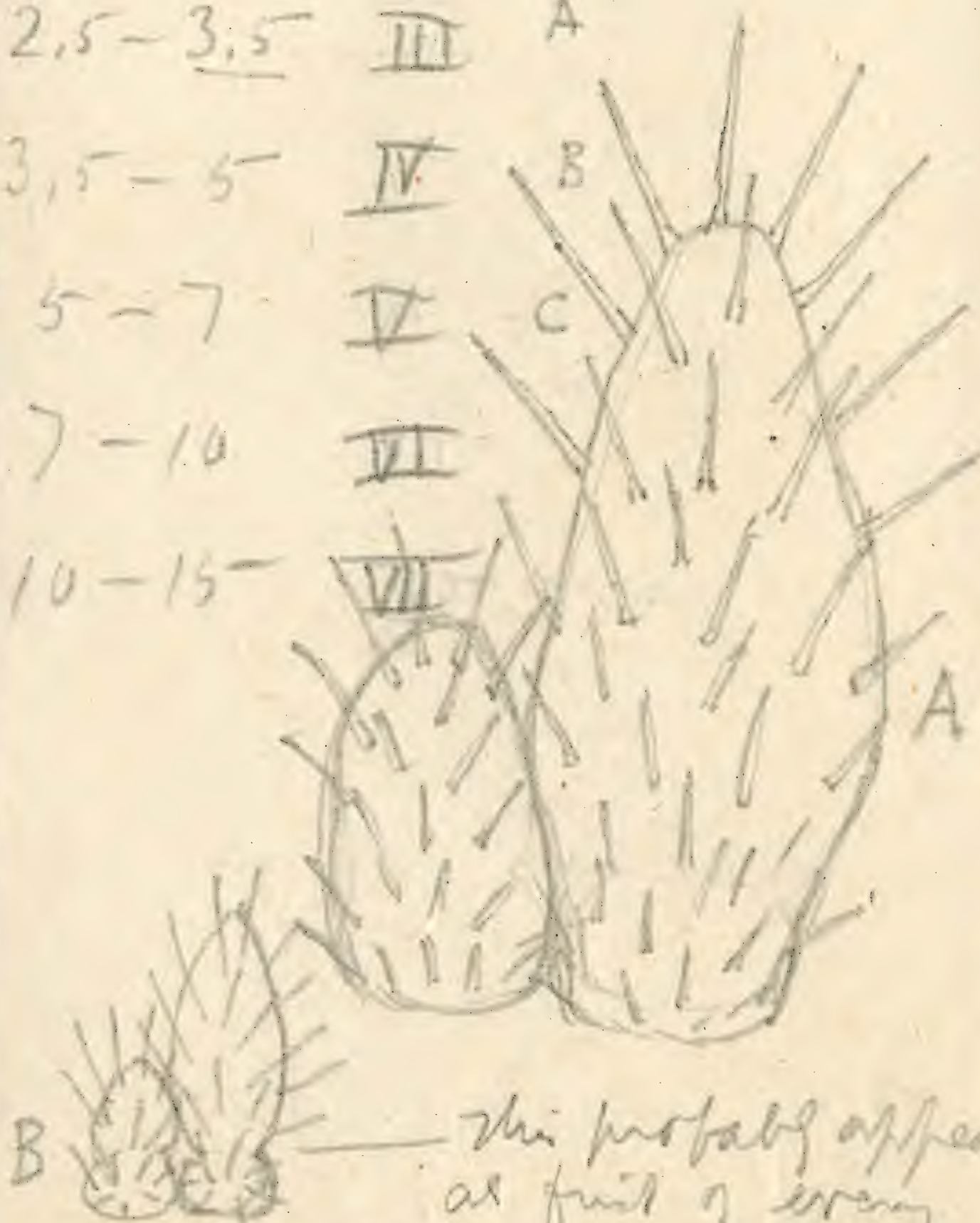
2.5-3.5 III A

3.5-5 IV B

5-7 V C

7-10 VI

10-15 VII



this probably appears
at first of every
stage and ramifies
somewhat later.

End of stage
IV 12
III

599 Bellport Y.

July 21 1896



Ant

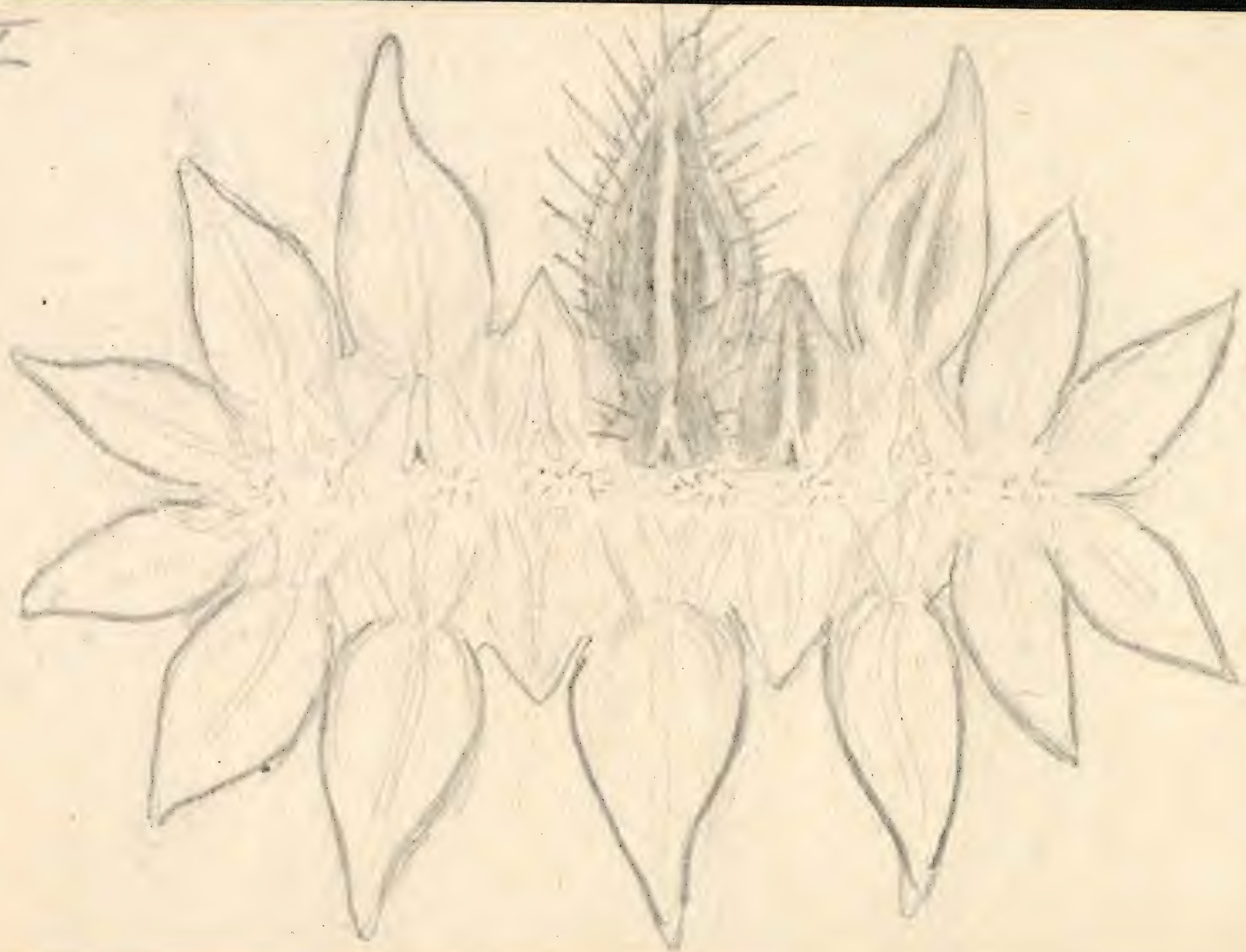
X20

Drawn by P.H.K.

599 V shed Jul 31 by hind VI
Long horn longer, short ones short
in proportion 2^d 3^d 5th curve
backward, sickle shaped, 7th found
9 pairs visible from above, 12th and
8th short, 4th & 6th very short.
Each has a constant of buccal
piece, both piece & horn with
a terminal seta from a round
tubercle. Horns covered with large
coarse smooth stiff pale spines,
also fine short, broad branched
hair which becoming very thick
at apex, giving the horns the
appearance of rusty brown tips
a few dark hairs on dorsum as
before. On the short horns the fine
hairs are few to absent. (2) and
3-4 sick horn short, curve, with many
short spines and a pale smooth tip.
Brown, horns denser with a white
stripe on the inside. 5-8 area
markedly tubercles. [I see no different
area at tip of (3) around terminal seta]
No group bases of large horns swell
up with clear fluid (as seen?)
any to flanges withered to shed

Stage V
X 10

Ant



and on 9 where only ① is red.

~~July 22~~ ~~July 22~~ yellowish, cth & warts ①-③ purple
brown except warts on 7 and ②③ on 9 which
are pale rufous. Hair very short, stiff, black
on 3 and 13 more long white ones. Feet
short. Lat. s-v less yellow than dorsal.

Hd 6 ±. ~~July 27~~ yellow to ③, increases
greenish. Warts ①-④ and shield black,
shiny-stiff. Noinal, a few long white
ones from 3 and 13. Hair black. Hd 1 ±

Shed Aug 2-3 Same. ~~Aug 7~~ No difference
in a little more about brown. No change
since shed this date. ~~Aug 10~~ ~~Aug 10~~
have been the largest. Sprague's out of. Small
wholesome. ~~Aug 10~~ ~~Aug 10~~
Shed Aug 10 in thin flaccid w/.

Out June 13 1897 Harrisina americana
Cat. No. 12770

Mean around Sprague 6 ±

11 considering ① in those segments. Hd 1.4 ±
strongly retracted. Hair pointed outstretched
or erect & smooth with clear bulb at base.
Base like large tubercle. Skin fine clear
granular, warts not quite contiguous.
Yellow pigment on segs, transparent in
crease. Cth and warts ①-④ black.
Thick, stout, feet short. 5 warts on 3rd.

$$602 - 243 = 9$$

Eggs of Admetta spiruloides from Miss Muntz
laid July 9 1896. Slightly or in patches 2
to 10 slightly overlapping, elliptical, flat
1.1 x .7 mm, milky whitish or green a slight
yellowish tint. Retriculation very obscure,
not visible with a hand lens.

Hatched July 16. Larva from a flattened curved
plate length down slightly curved, dusky.

July 16. 9 at hatch. ~~July 16~~ ~~July 16~~

July 24	1.8		
" 25	2.1	eating	
" 26	2.2	"	
" 27	2.1	shed	
" 28	"	"	

" 29	2.5	eating	clearly a space ② 5. Setae
" 30	2.8	"	
" 31	3.2	shed	slightly enlarged at tip - 11
Aug 1	3.3	hide gone	
" 2	3.7	hatching	Uniform translucent whitish
" 3	4.1	eating	
" 4	4.7	still	skin smooth. Hd. 2.5 eye black
" 5	5.1	shed	

" 6 5.0 eating shed July 18 PM. Skin fine transparent
" 7 5.3 shed
" 8 5.5 shed
pitted granular, brown, some granular. ① the
leg out with a bunch of 6 to 10 tipped spines.
and one with 1 spine. ② continued spinous.
11 the spines are thin, 12 the spines are longer

Appl. paired, piceous, 24-25.
connected with a trans. stripe 8-9 and 9-10.

No marks. H. white, eye black, mouth brown, 4-2

more fine. Mice mutton patch, length 13 all white
a row or less distinct white line along ①
still July 28. H. black through 4-5, dusky flat,
side nearly 1, lateral ridge moderate, shape
as in mature. ① 3-5-8 11-12 large, rounded,
not long, others very small rounded apical.

② all small. Color whitish, dorsal 1 upper
1/2 of sides green from food; a white line along
① thickened at the large horns, causing the
H. space to widen & contract. In the wide
space 6-7 a rounded patch of pale purplish
pigment & in the space 9-10 a smaller
whitish patch. Skin finely reticulate, granular,
horns smooth; largest differences spaces indi-
cated by paired white dots. Also a little
purplish pigment patch 4-5, 1st 10-11 spot a
purple-red, another 14, round faint yellow.

Shed Aug 1 Structure same and just as in the
mature. Skin more granular, the whitish
white dots visible where the ground color is
purple. No change in markings from last
stage. Horns ① very faint yellowish.

Aug 2 Horns ① yellow, 3-5 red topped, a
faint yellow line along ① except
large horns, 3, 4, 5, 8, 11, 12. The space
filled in with dark purple except

7-point to 9 and 11-13. ② spots
pale white. Trace ② colorless.

Shed Aug 5. See 243 sample stage ② ex-
cept purple. Hatched. Horn patch 3-7
another 9-10 space at 9.

Shed Aug 9. 6-8
10 7.9
11 8.8
12 8.5
13 8.7

(Spent in a... Hatched, almost
same slightly
on the 8th

Shed Aug 13. See 243 for last stage and sample
for color. 6-11, 12, 13
Hatched ② dorsal, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Spots paired, greenish, 2 pairs 14 and 15.
connected into a trans. streak 8-9 and 9-10.

No marks. H. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

more from the ... all white
a row of ... line along @

side ... moderate shape

as in ... large, rounded,

not long, ...

20-21 ...

1/2 of sides ...

① described ...

to space ...

space 6-7 a ...

pigment ...

whitish patch ...

horns not as; large ...

cut by paired white ...

purple pigment patch ...

purple-red, another 14, round ...

shed (May) Structure same as ...

measured. Skin ...

white dots ...

purple. No change in ...

stage. Horns ...

Aug 2 Horns ...

destined yellow line along ...

large horns, 3, 4, 5, 6, 11, 12, the space ...

filled in with dark ...



7. post to 9 and 11-13. B. Report

paired white. Green ② colorless.

Shed Aug 5 Like 243 sample stage B. 6

capd purple more united. On patch 3-7

another 9-12, a ...

Shed Aug 9 Like 243 stage C. Paired white

Aug 9 6.8 like ...

" 10 7.9 ...

" 11 8.8 ...

" 12 8.4 ...

" 13 8.7 ...

(Aug 21 all) all conic pointed, almost

open at ...

irregularly ...

Shed Aug 13 Like ...

patches ② ...

① 13. Like 243 for last stage and sample

for ...

Will Cherry
vols
writing
(all 1 rush)

603

being perceptible on
right on bottom.
measured: 100 ft.

eggs of *Eucheia undetermina* from Miss
 Winton, laid July 12 1896. Slightly ov-
 in small groups slightly imbricate.
 Elliptical flattened 1.5 X .9, translucent
 pale ochre yellow in places. Rets. obscure. (last)
 more from Miss Winton. laid July 19 1896 Rets.
 brown, and in strong light revealed brownish
 nearly blackish, somewhat irregular.

Hatched July 28. Darkish yellow, shiny. ①
x x x x x x x x x x 5-6, 8, 11-12 and ②
x x x x x x x x x x 3-4 whitish setae
Darkish olive black

smaller tips No Sags well marked; skin
smooth. Length 1.1 mm Shape as normal, elongate
apex, lower horn vertical, prominent, touching

Molt July 29 On Horns ① 3-5, 8, 11, 12 large rounded,
July 30 1/2 eating the next ones ② small, all spined
= 21 1/2 "

Aug 1	1.8 to 2.0	D 5-7 4-10 with only sparse colonies
" 2	"	
" 3	1.9 rating	
" 4	2.4 "	
" 5	3.0 "	
" 6	3.0 to 3.5	With more large brown - spines pale
" 7	3.0 to 3.5	Flange tipped. Ridges whitish both

Rostral & lateral areas faintly shaded with
dull red. Horn pale. In depressed areas cleft
like with prominent teeth. Shape as in Adoneta
thickest part of horn general elliptical

8 \perp both coll. & S-V.

9231
 5-6
 at yellow, very dark
 thin stripe along
 along outer edge colored
 very brownish red
 11-12 large thick
 not showing, ©

Light yellow. D. 1.5, 1.5, 1.5
S. 1.5, 1.5, 1.5

Salix peruviana (Lam.) Griseb.

She had very faint,
dark. I can't find velvet and

How old is the system? (1)
which are in the ...

very dry coffee. D. A. p. 1000

u 11 4.5.10. The fly wing brownish pale orange, do

13. 6.11.1950 Longwood, New Zealand, 1950-1951

7. adjacent - 2nd & 3rd are adjacent to the 1st

the straight line along the outside

TT Aug 11 6 longhorns prominent. Bush, alders on

light red well defined, 6 short rows of small
scales in umbilicus not reddish. A faint

Indications of line and traces of var along

Wald Cherry
 25/6
 Lenticular
 (all brush)

603

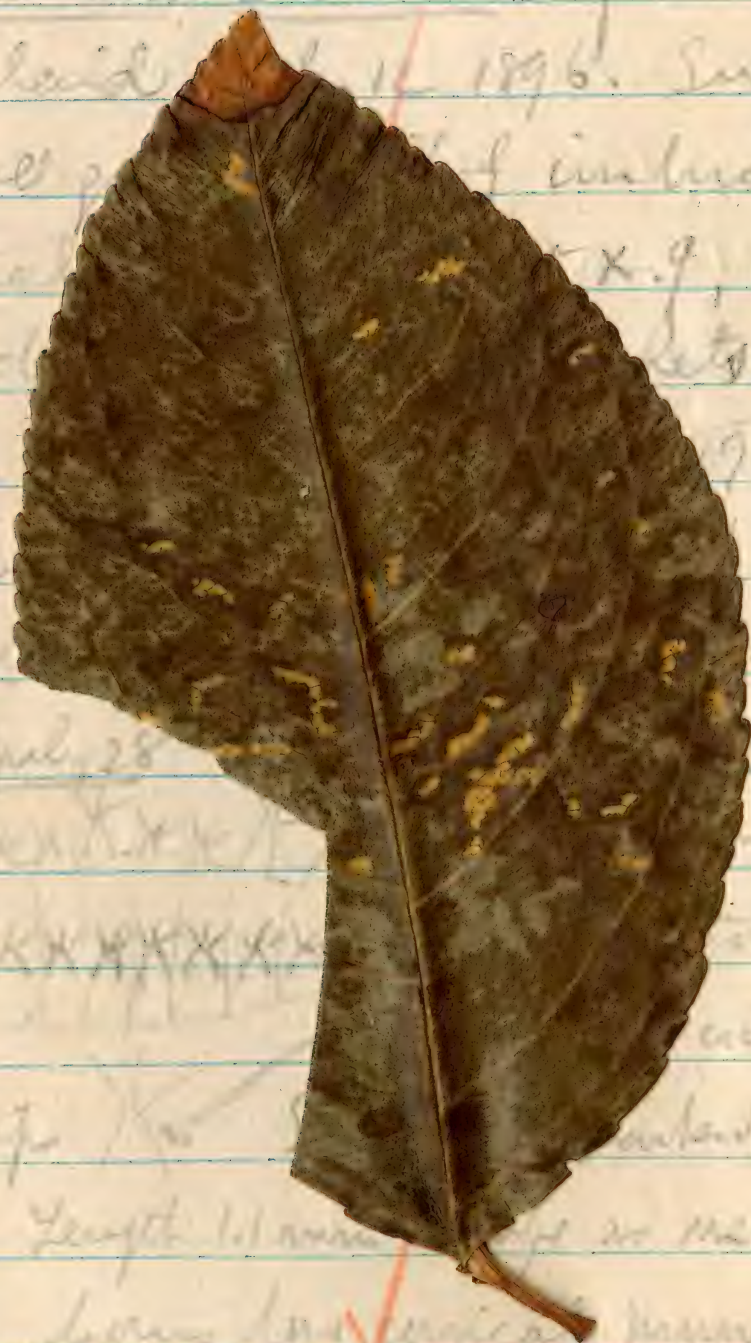
very perceptible in
 size on hatching
 measured a long one.

Egg of *Arctia indeterminata* from Union
 Newton, laid July 14 1896. Single or
 in small groups of imbrication.

Elliptical, 1.5 x .9, translucent
 pale ochraceous. Setae obscure.
 More from July 19 1896. Rte,
 brown, a few dark spots.

Hatched July 28. Larva 1st inst.
 1.5 x .9, translucent
 pale ochraceous. Setae obscure.
 More from July 19 1896. Rte,
 brown, a few dark spots.

Length 1.5 mm. Head as usual, elongate
 apiculate, brown, long, prominent, touching
 front July 19. Horns 1-5, 8, 11, 12 large rounded,
 July 20 1st inst. cutting the rest out. Small, all spined
 Aug 1 1.8 5th inst. 1-5 9-12 with only 1 apical seta
 " 2 2.4 " 1-5 9-12 with only 1 apical seta
 " 3 3.0 " 1-5 9-12 with only 1 apical seta
 " 4 3.6 " 1-5 9-12 with only 1 apical seta
 " 5 4.2 " 1-5 9-12 with only 1 apical seta
 " 6 4.8 " 1-5 9-12 with only 1 apical seta



dorsal & lateral areas faintly shaded with
 dull red. Horns pale. A depressed space cleft
 like with spined dots. Shape as in *Admetes*
 thickest though 4-5 but generally elliptical,
 dorsal flat. Sides round 1 with lat. & s-v.

Aug 11 Dark brown horns 1 pale yellow, no long
 ones visible. A straight white stripe along
 s-v space very narrow, the hatching on edge colorless
 III July 25 Horns dark greenish brown and red
 sides of 1, 2, 3, 4, 11-12 large thick
 light yellow, the head horn not showing, 1
 all smooth with s-v faint yellow. 1-5 9-12
 a depressed space cleft like with spined dots. Shape as in *Admetes*
 thickest though 4-5 but generally elliptical,
 dorsal flat. Sides round 1 with lat. & s-v.

Aug 11 Dark brown horns 1 pale yellow, no long
 ones visible. A straight white stripe along
 s-v space very narrow, the hatching on edge colorless
 III July 25 Horns dark greenish brown and red
 sides of 1, 2, 3, 4, 11-12 large thick
 light yellow, the head horn not showing, 1
 all smooth with s-v faint yellow. 1-5 9-12
 a depressed space cleft like with spined dots. Shape as in *Admetes*
 thickest though 4-5 but generally elliptical,
 dorsal flat. Sides round 1 with lat. & s-v.

Aug 11 Dark brown horns 1 pale yellow, no long
 ones visible. A straight white stripe along
 s-v space very narrow, the hatching on edge colorless
 III July 25 Horns dark greenish brown and red
 sides of 1, 2, 3, 4, 11-12 large thick
 light yellow, the head horn not showing, 1
 all smooth with s-v faint yellow. 1-5 9-12
 a depressed space cleft like with spined dots. Shape as in *Admetes*
 thickest though 4-5 but generally elliptical,
 dorsal flat. Sides round 1 with lat. & s-v.

①. Dorsum dark purple brown to ② and below
 ② on 3-5, a faint white lat line. ③ brown
 faintly pinkish. 5-8 edge white, colorless
 line region of spiracles. ④ 5-8 large than
 the rest of lateral horns which are small.
 Aug 12 Horns fine red except ①, but ② also. Dorsum with 3 pairs
 lines the color of sand. ① when 1 long, 2 long, faint red
 line above ①. Also 3 pale line in lat. space, 1 above 1 below
 the middle of white saddle lat line. Aug 13 not the

Aug 13 5.3 5.5	7.5 cat	Same as above, but 2 longer horns, a 22
" 14 5.2 5.5	" 7.5 cat	Same as above, but 2 longer horns, a 22
" 15 7.0 cat	✓ " 7.5 cat	White 5-8 of all purple cut 1 & 2
" 16 8.0 "	7.5 cat	White 5-8 of all purple cut 1 & 2
" 17 9.2 "	9.5 "	✓ <u>VI</u> Aug 19 all purple brown, the
" 18 9.5 "	9.5 "	horns fleshy red, not fleshy
" 20 9.5 "	✓ " 9.5 "	horns 4 3 blue white line, lat.
" 21 10 cat	✓ " 9.5 "	horns 4 3 blue white line, lat.
" 22 10.5 "	12 cat	Sp. with 2 yellow white ones only
" 23 12 "	14 "	Sp. with 2 yellow white ones only
" 24 13.5 "	15 "	Sp. with 2 yellow white ones only
" 25 14.5 "	16 "	Sp. with 2 yellow white ones only
" 26 15.5 "	17 "	Sp. with 2 yellow white ones only
" 27 16.5 "	18 "	Sp. with 2 yellow white ones only
" 28 17.5 "	19 "	Sp. with 2 yellow white ones only
" 29 18.5 "	20 "	Sp. with 2 yellow white ones only
" 30 19.5 "	21 "	Sp. with 2 yellow white ones only
" 31 20.5 "	22 "	Sp. with 2 yellow white ones only
" 32 21.5 "	23 "	Sp. with 2 yellow white ones only
" 33 22.5 "	24 "	Sp. with 2 yellow white ones only
" 34 23.5 "	25 "	Sp. with 2 yellow white ones only
" 35 24.5 "	26 "	Sp. with 2 yellow white ones only
" 36 25.5 "	27 "	Sp. with 2 yellow white ones only
" 37 26.5 "	28 "	Sp. with 2 yellow white ones only
" 38 27.5 "	29 "	Sp. with 2 yellow white ones only
" 39 28.5 "	30 "	Sp. with 2 yellow white ones only
" 40 29.5 "	31 "	Sp. with 2 yellow white ones only
" 41 30.5 "	32 "	Sp. with 2 yellow white ones only
" 42 31.5 "	33 "	Sp. with 2 yellow white ones only
" 43 32.5 "	34 "	Sp. with 2 yellow white ones only
" 44 33.5 "	35 "	Sp. with 2 yellow white ones only
" 45 34.5 "	36 "	Sp. with 2 yellow white ones only
" 46 35.5 "	37 "	Sp. with 2 yellow white ones only
" 47 36.5 "	38 "	Sp. with 2 yellow white ones only
" 48 37.5 "	39 "	Sp. with 2 yellow white ones only
" 49 38.5 "	40 "	Sp. with 2 yellow white ones only
" 50 39.5 "	41 "	Sp. with 2 yellow white ones only
" 51 40.5 "	42 "	Sp. with 2 yellow white ones only
" 52 41.5 "	43 "	Sp. with 2 yellow white ones only
" 53 42.5 "	44 "	Sp. with 2 yellow white ones only
" 54 43.5 "	45 "	Sp. with 2 yellow white ones only
" 55 44.5 "	46 "	Sp. with 2 yellow white ones only
" 56 45.5 "	47 "	Sp. with 2 yellow white ones only
" 57 46.5 "	48 "	Sp. with 2 yellow white ones only
" 58 47.5 "	49 "	Sp. with 2 yellow white ones only
" 59 48.5 "	50 "	Sp. with 2 yellow white ones only
" 60 49.5 "	51 "	Sp. with 2 yellow white ones only
" 61 50.5 "	52 "	Sp. with 2 yellow white ones only
" 62 51.5 "	53 "	Sp. with 2 yellow white ones only
" 63 52.5 "	54 "	Sp. with 2 yellow white ones only
" 64 53.5 "	55 "	Sp. with 2 yellow white ones only
" 65 54.5 "	56 "	Sp. with 2 yellow white ones only
" 66 55.5 "	57 "	Sp. with 2 yellow white ones only
" 67 56.5 "	58 "	Sp. with 2 yellow white ones only
" 68 57.5 "	59 "	Sp. with 2 yellow white ones only
" 69 58.5 "	60 "	Sp. with 2 yellow white ones only
" 70 59.5 "	61 "	Sp. with 2 yellow white ones only
" 71 60.5 "	62 "	Sp. with 2 yellow white ones only
" 72 61.5 "	63 "	Sp. with 2 yellow white ones only
" 73 62.5 "	64 "	Sp. with 2 yellow white ones only
" 74 63.5 "	65 "	Sp. with 2 yellow white ones only
" 75 64.5 "	66 "	Sp. with 2 yellow white ones only
" 76 65.5 "	67 "	Sp. with 2 yellow white ones only
" 77 66.5 "	68 "	Sp. with 2 yellow white ones only
" 78 67.5 "	69 "	Sp. with 2 yellow white ones only
" 79 68.5 "	70 "	Sp. with 2 yellow white ones only
" 80 69.5 "	71 "	Sp. with 2 yellow white ones only
" 81 70.5 "	72 "	Sp. with 2 yellow white ones only
" 82 71.5 "	73 "	Sp. with 2 yellow white ones only
" 83 72.5 "	74 "	Sp. with 2 yellow white ones only
" 84 73.5 "	75 "	Sp. with 2 yellow white ones only
" 85 74.5 "	76 "	Sp. with 2 yellow white ones only
" 86 75.5 "	77 "	Sp. with 2 yellow white ones only
" 87 76.5 "	78 "	Sp. with 2 yellow white ones only
" 88 77.5 "	79 "	Sp. with 2 yellow white ones only
" 89 78.5 "	80 "	Sp. with 2 yellow white ones only
" 90 79.5 "	81 "	Sp. with 2 yellow white ones only
" 91 80.5 "	82 "	Sp. with 2 yellow white ones only
" 92 81.5 "	83 "	Sp. with 2 yellow white ones only
" 93 82.5 "	84 "	Sp. with 2 yellow white ones only
" 94 83.5 "	85 "	Sp. with 2 yellow white ones only
" 95 84.5 "	86 "	Sp. with 2 yellow white ones only
" 96 85.5 "	87 "	Sp. with 2 yellow white ones only
" 97 86.5 "	88 "	Sp. with 2 yellow white ones only
" 98 87.5 "	89 "	Sp. with 2 yellow white ones only
" 99 88.5 "	90 "	Sp. with 2 yellow white ones only
" 100 89.5 "	91 "	Sp. with 2 yellow white ones only
" 101 90.5 "	92 "	Sp. with 2 yellow white ones only
" 102 91.5 "	93 "	Sp. with 2 yellow white ones only
" 103 92.5 "	94 "	Sp. with 2 yellow white ones only
" 104 93.5 "	95 "	Sp. with 2 yellow white ones only
" 105 94.5 "	96 "	Sp. with 2 yellow white ones only
" 106 95.5 "	97 "	Sp. with 2 yellow white ones only
" 107 96.5 "	98 "	Sp. with 2 yellow white ones only
" 108 97.5 "	99 "	Sp. with 2 yellow white ones only
" 109 98.5 "	100 "	Sp. with 2 yellow white ones only

A minute eating galls of 75 larvae each.
 Spin a web beside gall and eat a hole
 in apparently to get the saw fly saw. Finally
 eats all but a shell. Uses that shell of holes
 Not pale brown, not flat, eye black w. l. ±
 1 of very slender, white with 13
 transverse black bands situated in the
 anterior portion of each seg. especially 0-6
 and anal plate. Setae white, rather long
 but obscure. 1 & 2 in line, 3 with two
 tubercles, 4 and 5 unmarked.

band ②, 5-8 line red. between them 3 pairs of
 black line separated by white. the white line
 faintly confluent 20 faint cut of dark (4), 3 and
 separated by white sly bands. 2 faint white line
 black. Red side band partly cut by pale (4) (4) pale
 red, dark or white (1) Small (4) dark. Skin yellow
 in 2 and Aug 20. Orange yellow. Dorsal with
 " and line but faint spotted red. Dorsal line, 5-8
 edge red. white side line acc. yellow, black line above
 of 5-8. yellow at apex. black line below. black
 1-4. more yellow white the black lines. (red red)
 2/11 getting red of 5-8 and side yellow except dorsally
 2/12 5-8 cat 22 cat WIX 3/12 3. yellow. 4 faint Setae
 " 5 17.5 22 " like the others. Larva appears to
 " 6 17 21 " have a yellow ground
 " 7 17 21.5 " 3/12 3. yellow. 4 faint Setae
 " 8 21 30J 3/12 3. yellow. 4 faint Setae

6488.42

6130.97

357.45

261.17

96.28

179.6
261.17

17.03

19.20

8

1.10

45.33

In stage VII to VIII
 Regular little present
 action present.
 Stage IX 7 are
 present (present)
 like machine
 no action VIII

8	7.5	7.8	"	8	7.5	7.8	"
9	7.8	"	"	9	7.8	"	"
10	8.0	"	"	10	8.0	"	"
11	8.3	"	"	11	8.3	"	"
12	8.5	"	"	12	8.5	"	"
13	8.5	"	"	13	8.5	"	"
14	"	"	"	14	"	"	"
15	8.6	"	"	15	8.6	"	"
16	"	"	"	16	"	"	"
17	8.7	"	"	17	8.7	"	"



Little codd on wild cherry
stage I, Bellport L. I. Aug 1 '96
Elliptical, subtruncate before,
rounded behind. D. & lat.
spaces slightly concave, S-V
very small. Very slightly notched
ridge moderate, slight
conic tubercles bear the
clear black centered setae,
with cleft tips. Fork of ① very
short. Subopaque whitish with
a faint green tint. Skin

all smooth. Length .95. Seams
to have eaten on acct. of color

Sh III Aug 2. ① double, still at-

Aug 2	1.0	Sh III	noting, the spine long
" 3	1.3	eat	rostr. remote, black tipped
" 4	1.2	"	skin free granular, esp. pale
" 5	1.3	"	spines along the tubercles
" 6	"	to sh	ridges. Shape elliptical

rounded body, 5 round green whitish
scars green at all

Shuttle Aug 7 Pale greenish elliptical,

Aug 7	1.4	by hide	rather elongate, tail notched quadrate. Spin
" 8	1.4	caling	
" 9	1.6	"	
" 10	1.7	to shed	
" 11	"	"	granular with pale 1 st

" 12	2.1	cutting	setae on ridges esp D.
" 13	2.6	"	O few large tubercles in
" 14	"	to shed	D. space
" 15	"	"	"

Shuttle Aug 12 Ridges prominent,
" 16 2.9 caly tail quadrate, setae
" 17 3.1 " large dark tipped. Skin
" 18 " " fine granular, a few large
" 19 3.6 to shed
" 20 " " tubercles on the obscure lateral ridges &
" 21 " " 2nd spine on tubercles. Greenish dor-

sum dark, a faint yellow line
along D ridge, trace only. No dorsal rings.

Shuttle Aug 15 Elliptical, rather broad, tail
quadrate, pale green, al. canal distinct
a faint white line D and dorsal
dot centrally. Skin as in fasciola.
wide fine granules, also many pale
2nd spine. Not on ridges and in the
spaces. Setae coarse, dark tipped

Aug 22	4	caly	<u>Shuttle Aug 21</u> Like 606 stage
" 23	4.5	"	B = V Aug 24 5.0 to shed
" 24	4.7	"	Aug 30 5.8 caly
" 25	4.8	"	<u>Shuttle Aug 29</u> 5.3 5.0 3 rd 6.1 shed

Oct June ²⁴ 1898 *Chamaecrista*
 iv behind middle 605 = 24 cat no 15076

Shed 1st 1/2 2 same, white line cont. (end of)

Shet 11/26 Hb 2.5 - Same but setae ordinary and
very short. Body 11 or 12. D13 large but conical
other normal. Setae coarse long black. Hd round
lobes low very angular. Last abd. partly soft.

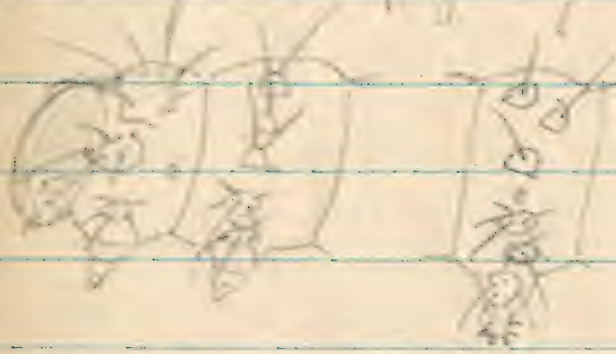
Eggs of *D. fasciola* from Was. Mtn. land July
13 1896 Elliptical, narrower than radial, not
greatly flattened, the deeper surface arched
7 x 5 height about .2 or more in proportion
unusually high. Probably always singly;
those in box when several together not
overlapping but closely piled or lumped.
Pete very faint, irregular, somewhat linear.
Color whitish translucent with very faint yellow

Hatch July 21 Hd white eye black mouth
 I
 21 1.0m was high 8-4 square 90
 " 22 1.1 full of red body all white notes
 " 23 1.1 " " " "
 " 24 1.0 ✓ shed scales hd 2 or less
 " 25 " " " "
 II 16 1.1 eating ?
 " 27 1.2 hiding
 " 28 1.4 eating
 " 29 1.5 yellow
 " 30 1.6 ✓ shed
 " 31 1.8 eating
 Aug 1 2.1 " " " "
 " 2 2.4 " " " "
 " 3 2.5 " " " "
 " 4 2.6 ✓ shed
 " 5 " " " "
 III 6 3.3 eating
 " 7 3.7 " " " "
 " 8 3.7 still shed

(11-16) pale yellow, (17-18) yellow, green center

607

Capitulum black on just hatched from egg.
L.H. Patel, July 18 1996. all dark



brown the head
black.

shd yellow the rest
body black, some

profiler horns on in head. but short
hairy and much shorter. ii orange

Calc. .37 .56 .85 1.29 1.96 2.97 4.5 $\frac{4.5}{100}$
Found 5 .75 1.3 1.9 3.0 4.5

afflicted Feb 15 1897 608

only 3.2 & 4.5 = afflicted
other mammals

Phatela on black & white oak Holmport
L.H. Patel, July 19 1996. close to *hamannalis*

but seems not single haired. Hd 3.2
fleshy, purple brown shaded on front
lobes faintly mottled with light spots
segregated into patches. 2 upper spines
and setae black the rest white, coarse.

I style on back, body dusky greenish
orange color, lighter on I and II, lateral
red. I-II have a central black hair
and small stiff white crown, III same
but all white, I-II elongated, prominent.

IV & V single haired, small. VI 5-haired
no secundaries. D. vessel dark, contained

with pale pigment. On
obscure double line between
II & III about later the faint
shiny transverse but less straight. III
surrounded by faint pale rings. No distinct
wings, plain translucent. Spinacles

Black edged ✓

Stage I 1.3 head whitish, setae white
on marked. Body greenish, translucent
setae the same but the crown more
distinct, 1-10 yellow, contrasting the
rest whitish. 2 broken yellowish d.
broken double dot (H 110) and stig
lines much more distinct than above.
Subventral spots whitish. Hd 1.9 same
Hd 1.5 whitish, no markings, mouth brown
lined, i-iii elongated. Hairs all
white, rounded. Al. canal blackish.
Hd 1.7 Still all whitish. i-iii distinct
elongated. The main brown d.

Stage II 2.3 came out 11/24/96 Hd 4.5 brown with
faint reticulation whitish dots on face & lobes.
Body nearly uniform reddish brown. A dusky
black d. stripe. Vents mostly red. d. to single
brown except on 1st; has 2 hairs. Tubercles small
not produced, orange II on 2-7 long black
hook-like tipped up. Setae white.
A few faint yellowish ventral setae from
anterior black ringed.

Stage III 3.5 1st & 2nd spots to 1 July
1896 Larva July 14 1896

I 1.0 ✓
II 1-1.4 ✓
III 1.4-2.0 ✓
IV 2-3 ✓
V 3-4.2 ✓

VI 4.2-6.0
VII 6-8.5
VIII 8.5-12.5

609 = 246

Egg of *Parasitochloris* from *Grasshopper* laid
July 17 1896. Elliptical singular, high and
not greatly flattened, opaque milky
white, faintly yellowish. 1 x .7 bright.
perhaps 2-3 mm. Ret. very obscure, round
minutely brown rounded angles or even
lunate. (Egg in 1st stage, to which does belong)

3 Egg on black at Bellport 22. July 27 1896

Found with (H 110) Solitary on back of leaf.

Elliptical, flat, very shiny, transparent.

1.5 x .3 mm. Ret. minute, angular lines, very
obscure rounded angles, distinct. See leaf through egg.
As on July 27 4 eggs on 1 leaf, black ink, under side. 1st
hatched July 30. Like I (1st slip for control notes.)
2nd eggs also hatched July 30. Same.

1st stage on same tree, stage I. Length 1 mm

XXXXXX Elliptical, brown
XXXXXX broadest centrally, concave
XXXXXX at large brown sides I

XXXXXX All opaque white, no markings. 30
XXXXXX Not fat as new one as large as one
XXXXXX ready to shed. 31st July 24. Like next, white
XXXXXX 1 mm. a brown spot on 1 dorsal, length 1.3 mm

"eats
around
street"

II sample (from shed 2)
Jul 29 1st marking
20 1.7 marked blue III
21 1.8 4 shed
22 1.8 4 shed

Wife on same tree. Length 1.1. Horns rounded
long. 3, 4, 5, 8, 11, 12 with many black tipped
spines. 6, 7, 9, 10 with 1 or 2 spines. ② rounded
rounded, opened all ground plane white. Skin
finely granular, sep. incision clear blue, defined
space not indicated. Body widest 4-5, narrow
a little round end. ③ smooth, approximate
projecting just slightly, but only reaching the
tail subquadrate. ④ horn 1.2-1.4 same, but a
chocolate brown shade d. on 3-4 which is high
the body sloping backward. Body less clear
white, and from contents of at canal.

⑤ horn 1.85-1.95 elongate, sides 1, 2 & a little the
highest. Horn ⑥ elongate
rounded 3-4 11 & 11 large, 8
moderate, the short ones
with 1 or 2 apices. ⑦ very small
with 5 or 6 spines, 3-4 large

than the other. Horns yellow & white line along
① connected by a narrow angular bridge 5 and 11
green 3-5 and 11 chocolate brown & brown line
along ②. Horns all whitish. Defining of ① (1) (2)
indicated, faint, also large lateral. Skin
near smooth, finely granular or punctate.
Hd. pale brown, eye black, mouth brown. w. 3 &
⑧ 13 partly fused into a short cleft opening
tail. Spines pale black tipped. Wt. 1.9 gms

II sample July 29 1.85. Like ⑧ but less pinkish, while the
dorsum 6-10 & greenish, without white
markings. S-V. edges white.

⑨ 2.5-2.8 3-5 a little enlarged, long elongate

⑩ 3-5, 11-12 elongate brown tips
⑪ and ⑫ 6-12
⑬ just like ⑩.
all brown, except
with a narrow
all before, &
faintly darkened
indicate d. with
in 3-4 only from 4-5.
on July 28 1.85 2.2 2.5

tail length 4.5
on half of side &
not marked, neck
pale, projecting
long ① with a
little, a pink
area of ② 3-5, all
is approximately
the same brown
I at least that
very obscure. Horns
by granular. Horns
open space.
all, head and clasp
Horns moderate
13 pointed white
dorsal as before.



tail still composed of 2 apical nodes, notched. Body
dark brown, d. 5-11 and 12 and 13. 14-15
described as before. The white line of ① and the
large, rather faint. Central d. and add (faint)
broken faint white lines. Horns all apical
line. ② 4-5-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039-1040-1041-1042-1043-1044-1045-1046-1047-1048-1049-1050-1051-1052-1053-1054-1055-1056-1057-1058-1059-1060-1061-1062-1063-1064-1065-1066-1067-1068-1069-1070-1071-1072-1073-1074-1075-1076-1077-1078-1079-1080-1081-1082-1083-1084-1085-1086-1087-1088-1089-1090-1091-1092-1093-1094-1095-1096-1097-1098-1099-1100-1101-1102-1103-1104-1105-1106-1107-1108-1109-1110-1111-1112-1113-1114-1115-1116-1117-1118-1119-1120-1121-1122-1123-1124-1125-1126-1127-1128-1129-1130-1131-1132-1133-1134-1135-1136-1137-1138-1139-1140-1141-1142-1143-1144-1145-1146-1147-1148-1149-1150-1151-1152-1153-1154-1155-1156-1157-1158-1159-1160-1161-1162-1163-1164-1165-1166-1167-1168-1169-1170-1171-1172-1173-1174-1175-1176-1177-1178-1179-1180-1181-1182-1183-1184-1185-1186-1187-1188-1189-1190-1191-1192-1193-1194-1195-1196-1197-1198-1199-1200-1201-1202-1203-1204-1205-1206-1207-1208-1209-1210-1211-1212-1213-1214-1215-1216-1217-1218-1219-1220-1221-1222-1223-1224-1225-1226-1227-1228-1229-1230-1231-1232-1233-1234-1235-1236-1237-1238-1239-1240-1241-1242-1243-1244-1245-1246-1247-1248-1249-1250-1251-1252-1253-1254-1255-1256-1257-1258-1259-1260-1261-1262-1263-1264-1265-1266-1267-1268-1269-1270-1271-1272-1273-1274-1275-1276-1277-1278-1279-1280-1281-1282-1283-1284-1285-1286-1287-1288-1289-1290-1291-1292-1293-1294-1295-1296-1297-1298-1299-1300-1301-1302-1303-1304-1305-1306-1307-1308-1309-1310-1311-1312-1313-1314-1315-1316-1317-1318-1319-1320-1321-1322-1323-1324-1325-1326-1327-1328-1329-1330-1331-1332-1333-1334-1335-1336-1337-1338-1339-1340-1341-1342-1343-1344-1345-1346-1347-1348-1349-1350-1351-1352-1353-1354-1355-1356-1357-1358-1359-1360-1361-1362-1363-1364-1365-1366-1367-1368-1369-1370-1371-1372-1373-1374-1375-1376-1377-1378-1379-1380-1381-1382-1383-1384-1385-1386-1387-1388-1389-1390-1391-1392-1393-1394-1395-1396-1397-1398-1399-1400-1401-1402-1403-1404-1405-1406-1407-1408-1409-1410-1411-1412-1413-1414-1415-1416-1417-1418-1419-1420-1421-1422-1423-1424-1425-1426-1427-1428-1429-1430-1431-1432-1433-1434-1435-1436-1437-1438-1439-1440-1441-1442-1443-1444-1445-1446-1447-1448-1449-1450-1451-1452-1453-1454-1455-1456-1457-1458-1459-1460-1461-1462-1463-1464-1465-1466-1467-1468-1469-1470-1471-1472-1473-1474-1475-1476-1477-1478-1479-1480-1481-1482-1483-1484-1485-1486-1487-1488-1489-1490-1491-1492-1493-1494-1495-1496-1497-1498-1499-1500-1501-1502-1503-1504-1505-1506-1507-1508-1509-1510-1511-1512-1513-1514-1515-1516-1517-1518-1519-1520-1521-1522-1523-1524-1525-1526-1527-1528-1529-1530-1531-1532-1533-1534-1535-1536-1537-1538-1539-1540-1541-1542-1543-1544-1545-1546-1547-1548-1549-1550-1551-1552-1553-1554-1555-1556-1557-1558-1559-1560-1561-1562-1563-1564-1565-1566-1567-1568-1569-1570-1571-1572-1573-1574-1575-1576-1577-1578-1579-1580-1581-1582-1583-1584-1585-1586-1587-1588-1589-1590-1591-1592-1593-1594-1595-1596-1597-1598-1599-1600-1601-1602-1603-1604-1605-1606-1607-1608-1609-1610-1611-1612-1613-1614-1615-1616-1617-1618-1619-1620-1621-1622-1623-1624-1625-1626-1627-1628-1629-1630-1631-1632-1633-1634-1635-1636-1637-1638-1639-1640-1641-1642-1643-1644-1645-1646-1647-1648-1649-1650-1651-1652-1653-1654-1655-1656-1657-1658-1659-1660-1661-1662-1663-1664-1665-1666-1667-1668-1669-1670-1671-1672-1673-1674-1675-1676-1677-1678-1679-1680-1681-1682-1683-1684-1685-1686-1687-1688-1689-1690-1691-1692-1693-1694-1695-1696-1697-1698-1699-1700-1701-1702-1703-1704-1705-1706-1707-1708-1709-1710-1711-1712-1713-1714-1715-1716-1717-1718-1719-1720-1721-1722-1723-1724-1725-1726-1727-1728-1729-1730-1731-1732-1733-1734-1735-1736-1737-1738-1739-1740-1741-1742-1743-1744-1745-1746-1747-1748-1749-1750-1751-1752-1753-1754-1755-1756-1757-1758-1759-1760-1761-1762-1763-1764-1765-1766-1767-1768-1769-1770-1771-1772-1773-1774-1775-1776-1777-1778-1779-1780-1781-1782-1783-1784-1785-1786-1787-1788-1789-1790-1791-1792-1793-1794-1795-1796-1797-1798-1799-1800-1801-1802-1803-1804-1805-1806-1807-1808-1809-1810-1811-1812-1813-1814-1815-1816-1817-1818-1819-1820-1821-1822-1823-1824-1825-1826-1827-1828-1829-1830-1831-1832-1833-1834-1835-1836-1837-1838-1839-1840-1841-1842-1843-1844-1845-1846-1847-1848-1849-1850-1851-1852-1853-1854-1855-1856-1857-1858-1859-1860-1861-1862-1863-1864-1865-1866-1867-1868-1869-1870-1871-1872-1873-1874-1875-1876-1877-1878-1879-1880-1881-1882-1883-1884-1885-1886-1887-1888-1889-1890-1891-1892-1893-1894-1895-1896-1897-1898-1899-1900-1901-1902-1903-1904-1905-1906-1907-1908-1909-1910-1911-1912-1913-1914-1915-1916-1917-1918-1919-1920-1921-1922-1923-1924-1925-1926-1927-1928-1929-1930-1931-1932-1933-1934-1935-1936-1937-1938-1939-1940-1941-1942-1943-1944-1945-1946-1947-1948-1949-1950-1951-1952-1953-1954-1955-1956-1957-1958-1959-1960-1961-1962-1963-1964-1965-1966-1967-1968-1969-1970-1971-1972-1973-1974-1975-1976-1977-1978-1979-1980-1981-1982-1983-1984-1985-1986-1987-1988-1989-1990-1991-1992-1993-1994-1995-1996-1997-1998-1999-2000-2001-2002-2003-2004-2005-2006-2007-2008-2009-2010-2011-2012-2013-2014-2015-2016-2017-2018-2019-2020-2021-2022-2023-2024-2025-2026-2027-2028-2029-2030-2031-2032-2033-2034-2035-2036-2037-2038-2039-2040-2041-2042-2043-2044-2045-2046-2047-2048-2049-2050-2051-2052-2053-2054-2055-2056-2057-2058-2059-2060-2061-2062-2063-2064-2065-2066-2067-2068-2069-2070-2071-2072-2073-2074-2075-2076-2077-2078-2079-2080-2081-2082-2083-2084-2085-2086-2087-2088-2089-2090-2091-2092-2093-2094-2095-2096-2097-2098-2099-2100-2101-2102-2103-2104-2105-2106-2107-2108-2109-2110-2111-2112-2113-2114-2115-2116-2117-2118-2119-2120-2121-2122-2123-2124-2125-2126-2127-2128-2129-2130-2131-2132-2133-2134-2135-2136-2137-2138-2139-2140-2141-2142-2143-2144-2145-2146-2147-2148-2149-2150-2151-2152-2153-2154-2155-2156-2157-2158-2159-2160-2161-2162-2163-2164-2165-2166-2167-2168-2169-2170-2171-2172-2173-2174-2175-2176-2177-2178-2179-2180-2181-2182-2183-2184-2185-2186-2187-2188-2189-2190-2191-2192-2193-2194-2195-2196-2197-2198-2199-2200-2201-2202-2203-2204-2205-2206-2207-2208-2209-2210-2211-2212-2213-2214-2215-2216-2217-2218-2219-2220-2221-2222-2223-2224-2225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609 cont.

Sample in Set. Aug 4, a salmon
flush in d. pale rufous feet, &
a line @ 11-13. Side marked
by 4 or 5 faint wavy or broken
pale lines above the brown
shade which borders the S-V
pinkish white line. Recumbent
anterior strongly but horns too
long and tail springy & cleft.
VII & VIII fleshy brown, d. & waved
S-V broken seg. Salmon marks
throat & S-V edge shaded darker
① 11 bright. Horns short, rounded
tail slightly cleft, springy. S(1)
pale dark spots, joined by a
whitish band, (4) and dark
narrow holes low down on sides.
A narrow salmon line @ edge
dark above side with 4 salmon
line. A conspicuous pinkish
line along S-V edge, indented
above by crimson & brown. Horns
all dark except ① 11-13, the
long ones form large buttons
at apex. Shape of mouth.

Shed Aug 12 A first printed tail but
 Aug 13 12 eating some spines on it. Cal-
 " 14 13.5 " tupe ② 6-12 skin fine
 " 15 12.7 " rather densely spined
 " 16 14 " as in S. stimulosa. No
 " 17 14.5 " dark shades, ground
 " 18 " " color a sodid faint
 " 19 16 " greenish mottled with
 " 20 " " the waved salmon
 " 21 all pink line, bright post.
 to spin 5 in d. sp. 5 in last sp.
 15.5 all somewhat confused

a narrow blackish line ① runs on
 ② s-v edge small pointed edged
 above by a dark red line. Def. sp.
 ① small point (4) narrow, elongate
 ① curved pit line ① indicated all
 blackish, no other. Horn short, the
 large ones spine turned in dark.
 ① 11 & 12 whitish, contrasting. Ridge
 ① by L. to side, ② very slight s-v and
 but spaces almost continuous and
 in line, s-v not retracted except
 in a slight groove. Shape as usual.
 sq. incisions well marked. Aug 13
 dorsal salmon darker on 9-12 shade
 into a fiery color. Tail still cleft
 To spin with cleft & Spiny Tail



609

Control notes for number
of stages and lengths.

Egg hatched July 29-30

July 30 1.2 working. Like I
" 31 " black horns to shed

Aug 1 1.6 eating, brown on 3-4
" 2 1.8 " sides III

" 3 1.85 " brown line ② white ①

" 4 2.0 " like III

" 5 2.1 to shed

" 6 2.3 eating Like III more than II

" 7 2.6 " brown tips on horns

" 8 3.0 "

" 9 2.9 to shed

" 10 3.1 eating will be like III

" 11 3.6 "

" 12 4.5 "

" 13 4.4 to shed

" 14 4.4 eating Like IV

" 15 5.3 "

" 16 6.2 "

" 17 5.9 to shed

" 18 " "

" 19 6.2 eating white horns
not pin out

new sample Aug 1 1896 end of VI
length 5.9 to shed (max)

Aug 20 8.5 eating VI

" 21 8.5 "

" 22 7.6 to shed

" 23 " "

" 24 8 eating VII Caltrape

" 25 10.7 "

" 26 12 "

" 27 13 "

" 28 10.6 to shed

" 29-30 " "

Sept 1 12 eating Tail single, skin

" 2 15.5 "

" 3 16 "

" 4 16.5 "

" 5-6 18 "

Sept 17 17.6

I 1.0 1.2 " 8 18.5

" 9 "

II 1-1.4 1.2-1.7 " 10 20.3

" 11 15.5

III 1.4-2 1.7-2.4 to J

IV 2-3 2.4-3.5

V 3-4.2 3.5-4.9

VI 4.2-6 4.9-7

VII 6-8.5 7-10

VIII 8.5-12.5 10-14



Single egg on wild cherry
very like pig tail.

Elliptical, flat, shiny
transparent, shaped
to lens. 1.8×1.4 mm
distinctly finely reticulated
to $\frac{1}{2}$ inch obj.

Hatched Aug 8 Little
horned larva like
pig tail.

5 reserve Cell. fulvicornis
and

Another common
on knobby grass etc

on knobby grass etc

Jan 14 1899

Hd 1.2 brownish yellow. Body same.
 Thorax black on 7 smooth. a faint
 one on 11, double. (3 produced it lies
 very abundant, (2 with short shiny
 black tipped hairs.) Body pale yellow
 a greenish at base of ground color, side
 below then all brown brown mottled
 except at ends. Neck whitish with brown
 ring at base. Hd 1.2 similar, but all pale
 yellowish a long 7 on 7. Cat May 13 1915
 Cat no 12729

426

 $1.24 - 1.8$

1.8-2.6

26-37

2

11

17

 $3.7 - 5.2$ $5\frac{1}{2} - 7.8$

7.4-10

10 - 15

V.

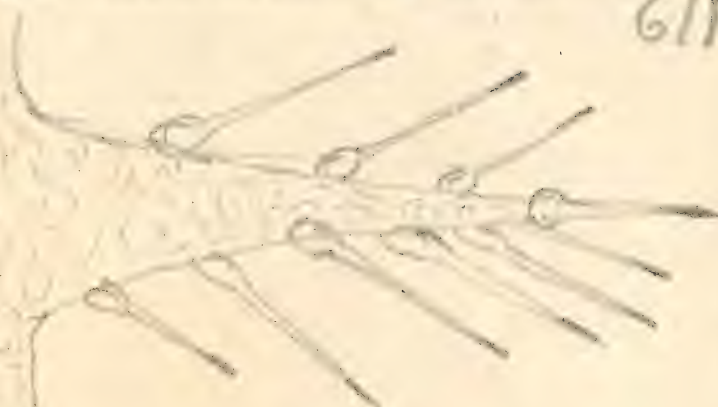
81

VI

374

Y-1112 red and pink. (altitudinal) white oak near

61



A lower stage D

This is a ① horn but there
are all the same, the
② with more spines.

skin is covered by reticulation

elevated folds which take
the light. Granules must
be large, appressed and
concave, their raised
edges meeting.

179

edge & base
reticulation
quadrangular
regular 1.6 x .9

11 m ①
9 in ②

1. *Agave* yellowish
 whitish, setae
 present. Hair? or
 be slender. Head
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Black-eyed Spine

[illegible]



A horn stage D

This is a ① horn, but they
are all the same, the
② with more spines.



Skin is
covered by
reticulation

elevated folds which take
the light! & cavities must
be large, appressed and
concave, their raised
edges meeting.



Portion of 1
seg. sides
area and
that of hem
stage E

Ant.

- I 1.1
- II 1.1 - 1.7
- III 1.7 - 2.5
- IV 2.5 - 3.6
- V 3.6 - 5.2
- VI 5.2 - 7.4
- VII 7.4 - 10
- VIII 10 - 15

432
125
1.2
1.8

4/1.8 whitish mottled brown over lobes, jaw & base.
 3. head pale cream color a dark brown sd band
 joined by a trans. band 7 & 11, mottled 3-4 pale
 ③ long papillae, body flattened, squarish. Hair pale
 brownish ① ② short 6/10 red plate, ③ very long

Jan 14 1899

Cal. nota seems different from my recollection
 of ovula. White note. Bellport 28 July 1896
 Cal. leaves, looking slightly. Hd. 8 pale
 testaceous. Body flattened, 3 large warts ③ and
 feet 8-10, 13. Pale greenish whitish and
 brown shaded, a d. from patch 7. Sd
 irregularly streaked brown. Hair ① ② short
 bristly, ③ very long the vent lobes
 shaggy. Hair pale, warts pale brownish.
 a faint dark l. line

Hd 1.2 brownish testaceous. Body cream
 brown. Ventrals a) dorsal. a faint
 red on 11, double. ③ produced at base
 long abundant, ② with short spiny
 black tipped hairs. Body pale yellowish
 a greenish d. band of ground color, sides
 below the all brown mottled
 except at ends. Vent whitish with brown
 ring at base. Hd. similar, both all pale
 yellowish. a long 5/7 11 7. Oct May 13 1897

Cat no 12729

Call

1.26

I

3.7-5.2

V

1.26-1.8

II

5.2-7.4

VI

1.8-2.6

III

7.4-10

VII

2.6-3.7

IV

14-15

VIII

6/11

Little code just hatched 3 on white note near
 of shell Bellport 28 July 1896.

Eg shell. Laid on angle side at edge of leaf,
 solitary. Elliptical, flat, reticulation
 distinct, linear, triangular, quadrangular
 rarely pentagonal, angular, irregular 1.6x.9
 shell white, translucent.



Entirely whitish. 69 faint curve of eggs yellowish
 in a broad patch. Hairs some whitish, some
 brown with expanded tips. Sappanot fair, was
 marked. Skin perfectly smooth shiny. Head
 July 5 1.1 resting whitish, eye black. ③ 3-6 long
 26 on map 6-12. Dorsal white 13 tubercles
 27 1.1 to shell ③ about 25 ② out at rd 15, 18, 21
 28 1.3 eating on map 12 on under side in the white out
 29 1.6 " " these 2 lines very inconspicuous, like nothing
 30 1.6 " " 5. Space broadest ant. gradually narrowed
 31 2.0 " " 6. Last not narrow, ventral 1/2 of 1st
 Aug 1 1.8 to shell and ant in stage I.

II 2 " " Stage II July 27. Hairs about 4 lines
 " 2.2 eating ③ pale, black tipped spines
 " 4 2.5 " " some dozen or 20. Skin fine
 " 5 2.5 " " water granular, double d. sep
 " 7 " " 1. several spines small, round.
 " 8 " " 2. all spines: ③ 3-4 long
 " 9 2.4 eating each with one spine tipped & 2 red
 " 10 4.4 " besides the black tipped spines.
 " 11 4.5 "

Aug 3 4.8 caterpillar
 Aug 10 5.0 caterpillar
 Aug 22 5.3 caterpillar
 Aug 25 5.5 caterpillar

All ground plane white, the only color the black tip of the spines. Dorsal space rather broad, rounded off at 3, rest tapering, round. Lat. space rather large, diminishing at ends. S+ space very small. Prolegs moderate & the moderate rounded horns. Horns project at more than 45° but not at all horizontal. Thorax not flattened, both sides equally prominent. Spine a bare few or confused with scales and spines curved. Skin fine, creased, shagreened rather than granular, almost evenly, unicolorous. Prolegs at 2-3 caterpillar, but dorsal broad.

III Aug 6 5.1 caterpillar
 Aug 13 5.2 caterpillar
 Aug 20 5.3 caterpillar
 Aug 27 5.4 caterpillar

Another on black oak leaflet just 31 Stage III?
 Aug 31 2.0 caterpillar
 Aug 1 2.6 caterpillar
 Aug 3 2.7 caterpillar
 Aug 4 2.6 caterpillar
 Aug 5 3.3 caterpillar
 Aug 6 3.7 caterpillar
 Aug 7 4.1 caterpillar
 Aug 8 3.5 caterpillar
 (put it out)
 Sprined, then spine slender (thin), with small black tips. D12 is longer than the others. D13 same length a little longer on 3-4. Skin clear, shagreened, as if the prolegs were closely appressed and concave instead of convex as usual. Light yellowish green, dorsal paler, a pale yellow line along D, straight, fainter at ends, a trace of bridge m9. Shed Aug 5. Red on horns and bridge like C. evidently stage A = B = III.

Aug 11 4.2 caterpillar
 Aug 12 4.5 caterpillar
 Aug 13 4.8 caterpillar
 Aug 14 5.1 caterpillar
 Aug 15 5.4 caterpillar
 Aug 16 5.7 caterpillar
 Aug 17 6.0 caterpillar
 Aug 18 6.3 caterpillar
 Aug 19 6.6 caterpillar
 Aug 20 6.9 caterpillar
 Aug 21 7.2 caterpillar
 Aug 22 7.5 caterpillar
 Aug 23 7.8 caterpillar
 Aug 24 8.1 caterpillar
 Aug 25 8.4 caterpillar
 Aug 26 8.7 caterpillar
 Aug 27 9.0 caterpillar
 Aug 28 9.3 caterpillar
 Aug 29 9.6 caterpillar
 Aug 30 9.9 caterpillar
 Aug 31 10.2 caterpillar
 Aug 1 10.5 caterpillar
 Aug 2 10.8 caterpillar
 Aug 3 11.1 caterpillar
 Aug 4 11.4 caterpillar
 Aug 5 11.7 caterpillar
 Aug 6 12.0 caterpillar
 Aug 7 12.3 caterpillar
 Aug 8 12.6 caterpillar
 Aug 9 12.9 caterpillar
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 Aug 14 14.4 caterpillar
 Aug 15 14.7 caterpillar
 Aug 16 15.0 caterpillar
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 Aug 25 17.7 caterpillar
 Aug 26 18.0 caterpillar
 Aug 27 18.3 caterpillar
 Aug 28 18.6 caterpillar
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 Aug 30 19.2 caterpillar
 Aug 31 19.5 caterpillar
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 Aug 3 20.4 caterpillar
 Aug 4 20.7 caterpillar
 Aug 5 21.0 caterpillar
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 Aug 11 22.8 caterpillar
 Aug 12 23.1 caterpillar
 Aug 13 23.4 caterpillar
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 Aug 15 24.0 caterpillar
 Aug 16 24.3 caterpillar
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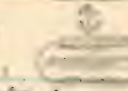
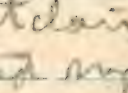
VL

[illegible]

Brotherhood no shield, 2 warts on each edge to help
fl. sd & last ones, latter projecting, add. sd &
last small warts on last edge.

31K on the style

612 = 533

4 eggs laid on stem of white oak
 Bethel L. I. July 26 1896. Elliptical, flattened
 on sides, Saturniform, laid on sides, white,
 a black spot in middle of flat
 side and one end with angular renate
 markings evenly fitted on  dorsal
 aspect. $1.6 \times 1.4 \times 1.0$. Finely shagreened.  \leftrightarrow 
 Similar egg from W. D. Keenett, Montclair, N. J.
 "Ectoparasita americana, deposited nights of Apr.
 20 & 21, 1902 from wild moth found on trunk of
 oak tree." Hatched May 2 1898 & all covered
 with long covering 2d, hair from roots.
 (Scale .61 under 533) H. round, wide
 than high, smooth, a round, large, slaty
 black, covered with fine 2d white hairs.
 Head flattened, 2d white distinct esp. on c
 and feet purplish-red. Slaty grey. Gd.
 dark black. Hairs of a white color, 3d
 line broken on 6 and at the ends. Hairs
 numerous from small white grey areas,
 more very long. Black & white around
 white blackish. ii most in line small,
 distinct, iii smaller, iv & v very small, nearest
 it has a little dorsal, vi divided, an extra
 red spot between vi & vii. A pair of dots on
 the ridge, anteriorly yellow & then a space
 of a line, red dots on joint posterior to the
 last pair. Length 14.5
 went on 1st annulet in line with spiracle longer
 than iv & v, a single hair on foot. covered
 behind iii; hairs scattered on legs last

Another false *Bombus* 43. Sept 1 1897. On
wild grape. Silo on brown points. Hair fairly
segmented with clear bulbs at extreme base.
L.B. imm. Same as last but: genitalia (immature)

614

Cap 1 1903

Pyronotus solitary on grape but common
on a plant, pinkish, Lynch's Wood, Rhine-
land May Aug 28 1896.

Flattened, squarish, head retracted, feet
short 7-10, 13 3 rows of low flattened warts
on head stiff hairs, three from (1) longer.
Body blackish or purplish, a broken black
d. line with adjacent dots on 5 and before
(1), a line above, below (2) below on
occasions, a little curved on each seg. the
upper one dorsomedial above faintly of white.
On (1) blackish, (2) pale except on 6. Spines
on 5 up. An scutell area around which
on 6 and 11. Head (1) dusky (2) pale.

(Head on 3, 4) 2 in green one d. markings on
5 and 10-11 larger. Hair appearance of green
d. a broad gray but much. Looks like black.
Length 5-6 mm. Smell. One from Sept 1 '00

like *Harrisianus*.
Bred by Candell
1900 Cat no 15870

Acrotithus falsarius
from all *Thalassia* & etc
in 5th Dec 1907

600

615

Larvae of *Plataneia* ^{*pygmaea*} ~~*hypoleuca*~~ from eggs put
by Dr. Ottolengui at Turin Mt. House. N. H.
Hds. 8 (two dead) black, body? Hair spinulose
rather fine, even length & dense, black
& white mixed, more black from 5. Seem
like next but less defined. Warts good size.
Hds. 8 (two alive) Hd small black shiny.

Body reddish green gray with a black middle
8th line appearance dark. Warts all large
i-vi normal, white, ringed with black &
with black tubercles, i-iii on 5, 11, 12 & 13
nearly all black. Hair rather fine, spinulose
like but rather even, spinulose black & white
more black on 5 and 11. 2 or 3 large smooth
white ones at the ends, i.e. 3-5, 11-13.

Legs pale, the plate dusky. (Many well up.)
Shed Sept 10 Hd 1st same old dark shade
broad, smooth must all on the sides
body a broad pale d. space, with
white rather continuous line on segs on


5 and 11. Hair looks brown gray black
in 5 and 11. It is similar as before, rather
stiff, mainly horizontal. Hd. all black
Later part of body got gray and the pale
hair brownish. Wed Sept 17 Hd 1.5 x shiny
black small. Body looks gray all over the
sides but between individuals is paler
whitish. Ventrals white at mouth except the
black patch. Nails in 5 and 11 are shiny
black and have contrasting black ends.
Other hair reddish brown, mixed sparsely with
black a little sparser. A few large feet
come from the ends of the body, some black
and sharp pointed & minutely barbed as
the other are. Hair rather stiff.
(It has not been perceptible for days; it
sluggish but alive) Died by Nov 1

616 Apr 21
Lagva on live oak, Miami Fla, Dec 22 1896.
Feet as usual, distinct, head retracted
Body ^{slate gray} whitish: hair dense, concealing
everything regular, soft, directed
backward, pale gray white with an
under tint of darker gray which pre-
dominate narrowly along the s-r
edge and in a disheveled and tuft
above the hood. Dorsal line slightly
beaded, anal hair short, on tip of
the anal plate reddish.

Small one Dec. 23 Hair very fluffy all over
and white. Body above through and
whitish a brownish d. band divided by
a whitish line, a broad brown lateral
band. Spiculae glands show white.
Edge of c-sh and anal pl. orange tinted.

Out April 27 1897 Mr. pygidifera ♀


617 Eumecurus atala

Larva of the black. blue shiny red dorsal Lycopodium
^{Zamia integrifolia}
 on fern leaf - conspurcated left plant at Miami
 Fla. Dec 22 1896. Egg  button like with
 distinct annulations which a smooth. Surface
 with long white bumps, d. 1 mm (see sketch)
 Color fleshy white, annulations darker to eye.
 Stage I (see sketch)

Young larva reddish with green tints. 7th sd
 large yellow spot. Hair black coarse, ir-
 regularly distributed, essentially as next.
 Mature Larva, slightly flattened, head
 retracted, 2 forming a rather prominent collar.
 Anal pl. large distinct, flattened but fleshy
 Segment distinct, a rounded prominent sd
 next like fold, and another subtip, giving
 the body a hexagonal, nearly regular outline
 from in front. Deep red, shiny, 2 and 13
 more nump. Hair ascending, short rather
 sparse, blackish. darker large & coarser
 on the sd & ss bumps. 7 bright yellow
 spot sd on 4-10 (see sketch)

Call. 48 74 1.1 1.7 2.5
 Food 51 75 1.1 1.7 2.4

618

Pyro Euclyptus on Mussaenda ilicifolia
 notched-leaved, red ber-
 and vine in fruit. Miami Fla, Dec 22 1896
 3 inst a thorn, 2 drawn in close, skin smooth
 orange red, irregular grayish shaded d.
 and a distinct diffuse band or band.
 Inst small, inconspicuous, grayish on the
 gray veins normal, it short, 2 long
 hair seen on 12. Hair not long thin, not
 abundant, not necessarily long, slaty
 gray in several spreading tufts. Head
 light nump, 1.1 mm rounded, scarcely
 lobed. Hair fine simply barbed.
 under leaves blackish and pale mixed
 the light to plumbeous. 2 inst a little
 just one for cth. less haired. Hds ^{1.7}
 Stage I shiny, big distinct; head ^{1.7} setae rather
 long single, blackish, i-v whitish, i-v on abd, then
 from  the other whitish & obscure (less only) 2.5-3.5
 Hds 7, 7.5, 8 all nump, but concolorous, small
 rather smooth Hair fine not dense, in spreading
 tufts light slate gray, mixed of dark & pale
 [see under 619]
 on the Hds 7 1.1. Orange immaculate; hair thin gray

619 = 617

On the ground, Miami Fla Dec 22 1896
Hd light orange, rounded with pale brown.
w. 24± mm. 3 rows on thorax, abd. rounded
is absent, & small. Body ground orange-red
a heavy diffuse violet d. band to ii and
anterior iii to feet, slightly interrupted
around the whitish spiracles, making the
body dark with a red band (lat). Mark
concolorous dark, rather small. Hair tan-
lined, gray, black, whitish mixed ex-
cept from i and ii above on 5-12 where
they are darker and thick, almost
tripled, forming a series of separated
short ill-consolidated brushes.

Length about 20 mm. Venter, feet orange.
(Dec 23 ate food plant (618) Dec 28 spun an

| | |
|----------------------------------|------------|
| Sample Stage I (Shed) head .5 mm | elliptical |
| Shed Dec 24 | " " |
| Shed Dec 29 | " " |

Web, made. web
of a few by hairs
and a few strands
straight through.

Out Jan 11 1897
24 1697

620 = 618

Egg laid by caught ♀ *Syntherisma min-
ima* Miami Fla Dec 24 1896. Laid on
food plant of 618 singly on back of leaf.
Shape conical, rather pointed above,
narrowed at base. O. Smooth, shiny,
light ochre yellow with a very bright
pearly white luster on the reflection side.
Shell white, under 1/2 inch off. Lustrous,
anterior, smooth internal rets. D. 8 height. 7 mm
7 others in a batch found on the same food
plant. Also 2 egg shells and 2 others.
Hatched Dec 31 took the found egg and three
laid as above described.



620A One spun Jan 12. Hd 2.3±, all orange
except diffuse shade iii-vi. Hair all
single small tufts like young larvae.
no branches! (Ent Feb 17 1897) ♀

621

Cixidia (Placentia?) on the white sand Miami
 Fla. Dec 22 1896. Head and all the feet
 light red. Body velvety black, the
 venter shining black black with large
 smooth bases like jewels, all large
 normal. A series of red dorsal marks
 5-12, a narrow red line between i and
 a round spot between ii with a small
 dot post. antegonus. Hair coarse, stiff
 black, longer post, sparsely but
 coarsely barbed. Hds. $3.2 \pm 1.7 \pm$ mm
 Sometimes red dots reduced to 2 tiny dots per
 seg. on 4-11 only. [Got 13 heads over 3 mm
 5 heads $2 \pm$] Shd hd 2.2 Shd hd 2.7
 [all died: only thing not in collection!]

9. 11. 1898

May 13 1898

622

Phymatocera

T-larva on ^{not} under-leaved yellow flowered plant
 Downy pale green with white short hairs.
 Opening a little post, head retracted absc.




Pale green a very faint whitish
 line along i-ii, no marks. Head
 small, with short white hair
 with a few longer black ones
 from i-iii. Skin densely covered with very
 short white club-tipped 2^d hairs. Feet
 short or at least much retracted.
 Settling on a young leaf stem, eating it down.

May 14 1897 Cal. no. 12501

Phymatocera n. sp.

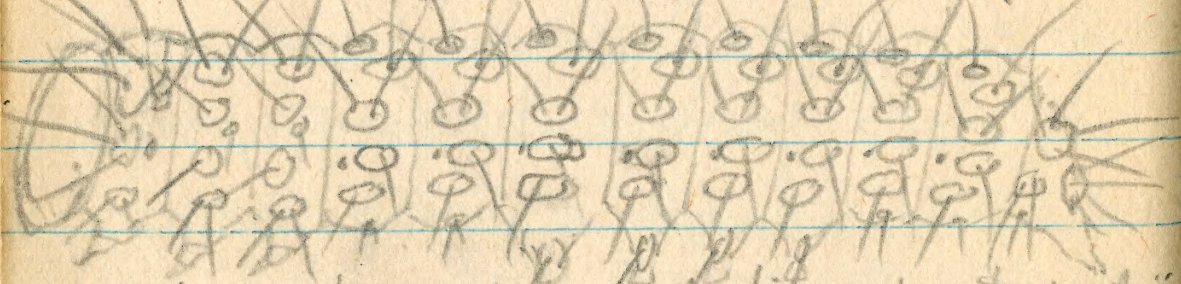
in the pupal stage
 Call. .56 .93 1.55 2.54 4.3 not $\frac{6}{10}$
 Found .55 .9 1.5 2.5 4.3

623
 no 3 *Pisicidia erythrura* (Jamaica dogwood)
 Skipped in juvenile tree. Main Fla. Dec 22 1896
 Large (wormy) in house of 2 leaves. Head cordate
 bilobed, mouth small, rounded. Small,
 head flat before. Greenish white, shagreened,
 Occiput behind, a line from over eye upward
 and spot on fr. aspect of lobe near apex
 black; w. 4.3 mm. Neck small, no cph
 nor anal plate; legs smooth centrally,
 densely wrinkled annulate at joint end,
 4 & 5 small annulate. Feet small. Appen-
 ance yellowish green - skin translucent
 light green mostly by transparency, a distinct
 straight sd yellow line 3-12; dense fine
 longitudinal yellow stripes confluent in
 little blotches and along sr fold is an
 ill defined line. Body almost naked,
 an abundant fine pile but very short
 and obsolete, white. Spiracles pale.
 Hd 1.5 in folded leaf. Hd broad shallow cord-
 ate bilobed, black, immaculate, rough.

Yess. Glosson bred. *Erycides amygdatus*
 short white & with large surker tips. I've in him
 on ss ridge (wvi) vii of setae on line leg not swollen
 notched O
 No shield nor plate. Body amorphous,
 translucent pale yellowish green
 dotted with yellow & a narrow sd
 and lateral (above sr ridge) yellow
 lines. Feet concolorous. Pile obsolete, body
 with pale. Cph slightly brown concolorous
 2.6 2.7
 Hd 2.5 Same yellow dot large and
 thicker. Skin sd and substy (on ridge)
 a greenish d. muscula line. Looks not
 hairy. No shield. Head rough & punctured.
 Egg.  Cylindrical swollen above base, flat
 above & below; 14 sharp narrow vertical
 plate-like ridges, each broadened at the
 top so much as to be contiguous, forming a
 crest around the deep smooth micropyle
 Light green, then reddish, the ridges white
 the crest conspicuous & snowy white. No
 cross lines to base. ^{under 2 in ridge very fine flat; green smooth}
 D. 8 height 9 mm
 Head .55 Dull black ^{yellowish white} Body concolorous. ^{square punctured} ^{notched}
 other yellow, segs well marked. Setae invisible lens.
 Hd .9 wide shallow cordate, dull black punctured
 Body greenish shaded with ochraceous at each end
 segs faintly annulate post. slightly shiny, translucent
 with a few yellow dots. Pile sparse minute.

624

Eggs by *Arctia glauca* Meunier Florida
Dec 24 1896 (cf 621) Rounded, very slightly
convex, the base flat; smooth shining
pale whitish yellow; diam .8, height .7 mm
Hatched Jan 7-8 Thick, rather short, head
bilobed, shining black, w. .8 mm Body
brownish, rather darker than usual, the
dors and vent dusky, not contrasting; an
indication of s-d darker line. Hair coarse,
but curving & not stiff, black, finely spin-
ulated. S-v hair white. Warts shining luteous



no real marks in body, s-d line due to vent ii-
Shed Jan 17 Head bilobed, shining black, the
hair distinct, w. .6 mm Body light brown
shaded with dark brown narrowly around the
wart and in the incisures. Warts slaty, the
black hair tubercles surrounded by pale rings

wart i small, one hair; ii very large, iii-vi of
good size, normal, many haired. On thorax
ii and iii high haired, the rest fair sized and
normal; 2 warts above ii. Hair stiff, barbed, not
very long, pointed, some black, some white,
those iv-vi all white and rather shorter.
Later the pale space enclosed by i-ii & the brown
mottling becomes reddish, a series of reddish
patches; also along the side between base the wart, leaving
a pale s-d line
Shed Jan 26 Hd bilobed shiny black, Δ labrum, base
of ant. whitish; w. .8 mm Body quite blackish above,
brown s-v wart large black but with pale bases
Hair black, white & short s-v a few long black ones
post. No line seen in body. Later color fades
but a distinct darker band as far as ii, area round
iii-v slightly reddish, also behind i (i.e. between warts), but
no lines on larva.

625

Wiggling micro. in a thin loose web on top
 of leaves of 618 plant. (moth cat. no. 12629 ^[pupa white]
 taken just emerged from pupa). Long, slender,
 delicate light green, segs. 3 annulate by
 slight creases, the first annulus small-
 est. A very narrow & faint pale red
 line along i-ii, s-r fold obscurely
 lighter. Head small, pale testaceous
 brown, slightly retractile. C-sh large
 semicircular deep reddish brown.
 Anal feet directed backward, brownish.
 Setae. fine rather short, i-iii colored
 by lines black or white rings. all feet
 dark reddish brown, short, (see alcohol
 for setae) Setae dusky. A rather broad
 straight median-ventral reddish brown
 band whole length.

